The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. LVII, No. 5 CHICAGO, ILLINOIS JULY 29, 1911

THE VISCOSITY OF THE BLOOD

RUSSELL BURTON-OPITZ, M.D., PH.D.

NEW YORK

When a fluid traverses a straight tube of sufficient length the individual molecular constituents arrange themselves eventually parallel to the long axis of the tube. Moreover, the cylinder of fluid does not move forward as one unit, but in such a manner that the central portion attains the greatest speed of flow, while the more external layers show a decreasing velocity from within outward. Thus, the layer of fluid which is in contact with the vessel-wall will show no movement whatever, provided that it moistens the wall.

It must be clear, therefore, that the individual particles composing a fluid must rub on one another. Elements in neighboring layers move at different speeds and while some molecules are separated from one another, new contacts are constantly formed. The movement of the fluid is therefore accompanied by an internal, or molecular friction.

If different fluids of the same temperature are forced through a narrow tube under a constant pressure, the quantities collected within a definite period of time will vary greatly. For example, if distilled water and blood are employed, the water will show the greatest ease of flow, while the blood will escape very much less freely. Similar variations in the volume of flow will be exhibited by any particular fluid, if it is subjected to different temperatures. The flow will be the ampler, the higher the temperature. In the case of distilled water and blood the cause for this phenomenon seems to lie close at hand. As the blood contains by far the greater number of formed elements, its internal friction must be very much greater than that of water. Although a structural peculiarity of this kind would readily explain the difference in the outflow, it would account solely for the quantitative peculiarities of the fluid. In accordance with this view, therefore, that fluid which contains the smallest amount of solids would escape most readily from a capillary tube, and would, therefore, be hindered least by the internal friction. All factors being equal, this purely mechanical explanation holds true in a large number of cases.

It is to be remembered, however, that marked differences in the outflow may also be obtained under certain conditions with fluids of practically the same composition, and differences may be obtained, besides, with the same fluid by exposing it to different temperatures. Many examples are at hand which tend to prove that variations in the volume of flow may also occur when the constituents of the fluid have not been altered numerically. It must be granted, therefore, that the internal friction which determines the outflow, is also dependent in a measure on definite qualitative changes of the particles forming the fluid.

The individual molecules may have suffered chemical or physical changes, increasing their volume or rendering them more adherent to one another. Clearly these changes need not be confined to the surface-layers of the various elements, but may involve the entire mass. Besides causing phenomena of agglutination, a certain agent might also alter the volume of the elements or might even transform the cellular elements into many-sided and sharp-cornered bodies or fragments. Furthermore, these qualitative changes need not be confined to the solids, but may also involve the molecules of water. It seems quite probable that changes in the size and in the internal arrangement of the latter may result with equal ease. Thus, it seems certain that variations in the flow of fluids through a capillary tube may also be caused solely by peculiarities in the character of their constituents—quite aside from any numerical difference.

If the relative amounts of water and solids are taken into account, a fluid is described as "thick" or "thin" (concentrated or dilute) and, if its peculiarity of flow, or better, its consistency, is in question, it is said to be "sticky" or "not sticky." The latter quality of a fluid is spoken of as its viscosity. It is dependent on the force with which the molecular constituents adhere to one another, and bears a direct relationship to the hydrostatic pressure which must be brought to bear in order to separate them. Correctly speaking, therefore, the term "viscosity" should be restricted to that type of internal friction which is caused by the qualitative peculiarities of the molecular components, but such a concise view cannot be taken at all times. For example, if the volume of flow of certain liquids is determined, the differences obtained are ascribed to differences in their "stickiness," while, at the same time, we include among these causative agents also mere changes in the number of the component particles. The exact cause, whether purely quantitative or qualitative, is not readily ascertainable at all times.

It must be evident from the foregoing that the viscosity plays an important part in determining the hydrostatic force necessary to drive a fluid through a system of tubes. In seeking an expression for this peculiarity of a fluid, we are obliged to make reference to the law of Poiseuille,[1] which permits us to determine the outflow quantity of fluids from any capillary tube in accordance with the following formula:

$$Q = \frac{d^4 \quad h}{l}$$

Q, the quantity collected, is directly proportional to the fourth power of the diameter of the tube, and to the height of the pressure, and indirectly proportional to the length of the tube.

1. Poiseuille: Ann. de Chim. et de phys. Par., 1843, Series 3, p. 7

Having in this way established Q for a certain liquid, it is a simple matter to calculate the quantity K, which escapes under the pressure 1, from a tube with the diameter 1 and the length 1, as follows:

$$Q : \frac{d^4 \quad h}{l} = K : \frac{1^4 \quad 1}{1}$$

$$K = \frac{Q\,l}{d^4 \quad h}$$

The value K represents the coefficient K for the fluid examined. Using K as a factor, we obtain:

$$Q = K \frac{d^4 \quad h}{l}$$

Having ascertained the quantity of fluid which escapes from a definite tube under a definite pressure, the coefficient K may be employed for the calculation of the quantity of liquid which would escape from any other tube under any other pressure. The viscosity of the fluid would be inversely proportional to the coefficient K.

Attempts to make use of the law of Poiseuille in determining the viscosity of the blood were first made by Haro,[2] Ewald,[3] and Levy,[4] but as defibrinated or oxalated blood was used in these tests, the results cannot be justly transferred to the living blood. In fact, I have demonstrated[5] that samples of normal blood rendered fluid by defibrination or by the addition of potassium oxalate, possess a viscosity much below that of the original sample. Although this difference was clearly in evidence soon after the withdrawal of the blood, it became even more manifest, if the above samples were permitted to remain undisturbed for a short time, so that a sufficient opportunity was given to the solid particles to settle. If under these conditions the upper layers of the blood were used for the determination, the viscosity values approached those for water, but became even greater than those for normal blood, if the blood near the bottom of the receptacle was employed.

Real clinical importance can be attached to viscosity values only if "living" blood, i. e., blood as it traverses the vascular channels, is employed. Agents for the purpose of preventing or retarding the coagulation cannot be resorted to, because any substance which will alter the chemical and physical character of the blood, will, in all probability, also change its viscosity. For this reason, it is imperative that determinations of this kind be executed within the time necessary for coagulation, namely, within a period of about three minutes.

A very serviceable method for measuring the viscosity of the "living" blood was finally evolved by Hürthle.[6] Cannulas are placed in both carotid arteries. One of these is connected with a mercury manometer, and the other with a capillary tube of known diameter and length. The latter is surrounded by a jacket through which water of 37 C. circulates. The blood escaping from the tube is collected in a weighing glass, the period during which it flows into this receptacle being indicated by tambours writing beneath the record of a Jaquet chronograph. The blood is actually collected in the glass during a brief period only, varying between one to two minutes, in accordance with its fluidity, but a somewhat longer time is required in addition for several manipulations, inclusive of the quick cleaning of the capillary tube and the cannulas. Several tests must be made in order to obtain a good average value.

The viscosity-coefficient K is ascertained by a calculation, for which the following factors are essential: The specific gravity, the blood-pressure, the duration of flow, the length and the internal diameter of the capillary. K for the blood is then compared with K for distilled water at 37 C.; the latter coefficient amounts to about 4,700. For example, if K for the blood equals the figure 940, then this particular sample of blood possesses a viscosity 5.0 times greater than that of distilled water at 37 C.

Before this method was actually applied to the circulating blood it was proved first of all that the law of Poiseuille is also applicable to pressures showing rhythmic variations,[6] as well as to fluids containing formed elements.[5] By another series of tests Hürthle and I[6] have shown that the blood may be permitted to traverse the capillary tube for a very much longer time than thirty seconds; without that the determination could possibly be endangered by coagulative changes.

The method above described necessitates a complete relaxation of the animal which was secured in all of the earlier experiments of this type by morphin and ether; in the subsequent tests, on the other hand, ether alone was employed. The question as to whether these drugs in themselves produce a change in the viscosity has been answered by me in the negative.[7] The viscosity of the blood in a normal rabbit having been determined, the animal was narcotized with morphin and half an hour later also with ether. The tests made subsequently revealed viscosity-coefficients which were in no way different from those obtained before the administration of these narcotics. The determinations must, however, be completed with a certain speed acquired by practice, because the viscosity increases somewhat in the course of the narcosis. If care is taken to keep the animal in a light, but nevertheless efficient narcosis, this increase will be scarcely detectable during the first half-hour, and this period is sufficiently long for the completion of two or three tests from which good average results may readily be obtained. The subsequent tests are prone to show a slightly increased viscosity, the rise being in a measure proportional to the duration of the narcosis, but, unless the experiment has been protracted, no special allowance need be made for these rises.

The cause of this progressive change in the viscosity must be sought in certain qualitative alterations of the constituents of the blood, induced by the anesthetic. I have endeavored to render these changes more conspicuous by subjecting the animal alternately to different degrees of narcosis.[8] Having completed the first determination of the viscosity during deep narcosis, the second was made during light narcosis and so on; moreover, the different tests were separated by intervals of about ten minutes, so that the differences in the ventilation of the lungs and the blood could become thoroughly established.

It was possible to produce in this manner very definite and regular variations in the viscosity. If the depth of the narcosis was lessened, the viscosity decreased, while on deep narcosis the viscosity again increased. Although well defined in each case, these differences cannot be regarded as of great consequence, because their range was rather limited. For example, in one experiment of this series the coefficient equalled the number 997 during light and the number 942 during deep narcosis; hence, while the viscosity was 4.7 times

2. Haro: Compt. rend. Acad. d. sc., 1876, lxxxiii.
3. Ewald: Arch. f. Anat. u. Physiol., 1877, p. 209, and 1878, p. 536.
4. Levy: Arch. f. d. ges. Physiol., 1898, lxv, 447.
5. Burton-Opitz: Arch. f. d. ges. Physiol., 1900, lxxxii, 464.
6. Hürthle: Arch. f. d. ges. Physiol., 1900, lxxxii, 415.
7. Burton-Opitz: Arch. f. d. ges. Physiol., 1900, lxxxii, 447.
8. Burton-Opitz: Jour. Physiol., 1905, xxxii, 385.

V. 5
1911

as great as that of distilled water at 37 C. during light narcosis, it became 5.1 as great during deep narcosis.

Equally conspicuous variations I have also been able to induce by altering the carbon dioxid content of the blood.[9] The animals used for these tests were permitted to breathe alternately either fresh air, or air to which a sufficient quantity of carbon dioxid had been added to produce symptoms of dyspnea. The blood reacted with great promptitude, exhibiting periodically a greater or lesser viscosity in accordance with the amount of carbon dioxid inhaled.

This result naturally invited another series of experiments,[9] by means of which it was established that the venous blood possesses a viscous resistance slightly in excess of that of the arterial blood. In the light of the preceding data it may be inferred that this difference is due in a large measure to the amounts of carbon dioxid present in these two types of blood.

Our attention must also be directed at this time to the experiments pertaining to the inner friction of the blood during asphyxia, made subsequently by Ferrai,[10] Ewart,[11] and Determann.[12] The blood was withdrawn from a convenient distal blood-vessel and was then passed through a viscosimeter. In spite of this marked diversity in the methods, the results show a perfect agreement.

Mention must also be made of the work of Haro[2] and Ewald,[3] who found that carbon dioxid increases the volume of the red cells. It might seem at first that this volume-increase is rendered possible by an osmotic abstraction of water from the plasma or from the serum and that, therefore, any increase in the viscosity would be caused by a "thickening" of the blood. As it has been proved, however, that the carbon dioxid does not alter the viscosity of blood-serum in any measurable degree, we must be dealing here with a volumetric increase of the red cells pure and simple. V. Koranyi and Bence[13] have shown subsequently that this process may readily be reversed by removing the carbon dioxid from samples of blood by means of oxygen, and furthermore, it has been observed by Bence that the high viscosity of the blood in persons suffering from diseases accompanied by dyspnea, may be temporarily lessened by inhalations of oxygen.

Qualitative changes of sufficient magnitude to alter the viscosity of the blood I have also been able to incite by means of alcohol.[14] Solutions in strengths of from 10 to 60 per cent. were introduced, either into the facial vein or into the stomach or the duodenum. Whether injected directly into the circulation, or into the digestive tract, the solutions always rendered the blood more viscous, the effect being particularly pronounced if the alcohol was introduced into the latter channel.

Having proved that the viscosity of the normal blood is lessened by defibrination and also by the addition of potassium oxalate in quantities sufficient to prevent coagulation,[5] I next attempted a series of experiments to portray the influence of variations in the number of the corpuscular elements.[9] Ox-serum of a certain temperature to which an increasing number of red cells of the same animal were added was used for this purpose. By this means it was readily possible to raise the viscosity of the serum to that of the circulating blood. It was also brought out that normal viscosity values are very largely dependent on the number of red cells present and that other solid constituents play only a minor part. This deduction receives an additional support in the results of tests made by me,[15] which showed that blood rendered lake-colored by freezing, exhibits a much lower viscosity than the sample from which it was taken.

I have also sought to establish the rôle of the red cells in the animal by means of phenylhydrazin.[16] If injected subcutaneously, this agent incites in the course of two or three days a marked reduction in the number of the red cells. For this reason I expected to obtain a decided decrease in the viscosity, but as, in spite of the lessened number of reds, the values remained considerably above the average, the phenylhydrazin must cause in addition certain qualitative alterations which are more influential than those of purely quantitative origin. It is also conceivable that the disintegrating corpuscles acquire an uneven and angular outline and would on this account be prone to adhere more firmly to one another.

I have also demonstrated that the addition of moderately large quantities of normal saline solution or distilled water to the circulating blood lessens the viscosity.[14] It is to be noted, however, that the decrease is not in evidence if the amount injected is small. This is particularly true of distilled water. Apparently, small quantities of these fluids (5 c.c.) are not sufficiently powerful to neutralize the progressive increase caused by the narcosis. In the case of distilled water, it is also probable that this agent incites deleterious osmotic changes which in reality would tend to favor the rise in the viscous resistance dependent on the anesthesia. When, however, the quantities injected surpass a certain minimum, the influence of the narcosis is overcome and an immediate decrease in the viscosity, due to the thinning of the blood, is the result.

Closely related to these tests are those dealing with the effect of hemorrhage.[7] A loss of blood amounting to about one-fourth of the total quantity, caused a material reduction in the viscosity within half an hour after the bleeding. This result is readily explicable on the basis that the blood lost is soon replaced by an inflow of tissue-lymph. We obtain, therefore, in this case an increase in the watery constituents of the blood and hence a lessened viscosity.

By another series of tests it has been established by me that the viscous resistance of defibrinated blood is subject to changes in temperature.[5] Every increase between 15 and 40 C. produced an immediate and decided rise. The same results were obtained with blood-serum,[5] but with this difference, that the viscosity of the latter increased more rapidly with higher temperatures, while the rises in the case of defibrinated blood were more equal throughout. Blood-serum behaves, therefore, like water or watery solutions.

In accordance with these results it was thought possible that the viscosity of the circulating blood could also be varied by subjecting the animal as a whole to changes in temperature. To test this assumption a number of experiments were made on dogs, while they were submerged in water of 43 C., or in water of 23 C. Other tests were performed on dogs placed in a compartment through which a constant stream of dry hot air could be passed.[17] These experiments proved con-

9. Burton-Opitz: Arch. f. d. ges. Physiol., 1908, cxix, 350. Preliminary notice in Proc. Soc. Exper. Biol. and Med., Dec. 16, 1903.
10. Ferrai: Arch. di Fisiol., 1904, i, 305.
11. Ewart: D. Sc. Dissertation, Liverpool, 1904.
12. Determann: Ztschr. f. klin. Med., 1906, lix, 283.
13. Koranyi and Bence: Arch. f. d. ges. Physiol., 1905, cx, 513.
14. Burton-Opitz: Jour. Physiol., 1904, xxxii, 8.
15. Burton-Opitz: See Note 9. Compare Brown, Royal Infirmary Reports, 1904, and Winter, Dissertation, Breslau, 1907.
16. Burton-Opitz: Arch. f. d. ges. Physiol., 1906, cxii, 6.
17. Jour. Exper. Med., 1906, viii, 59.

clusively that the viscosity of the blood reacts very sharply to outside influences of this kind. The cold-water baths increased and the warm-water baths decreased the viscosity very considerably, the effect being clearly in evidence during the first ten to fifteen minutes after the beginning of the bath. Hot-air baths on the other hand, did not render the blood less viscous, as might be supposed, but more so. This result may well be accounted for by the loss of water which a body, subjected to this treatment, must necessarily suffer. Using a different method, Lommel[18] has repeated these experiments on human beings and has obtained results identical with the above.

In view of the results described previously one might readily be led to believe that rises in body-temperature caused by a microbic infection, would also lessen the viscosity. A number of determinations which I made on dogs during experimental typhoid[19] have shown, however, that a change of this kind does not necessarily occur during fever. The viscosity-values to which reference is had at this time were in reality somewhat higher than the average. It seems possible that the effect of the increase in body-temperature is offset by certain qualitative changes incited, probably, by the toxins.

In the course of the winter of 1903, I had occasion to determine the viscosity in two dogs whose thyroid glands were greatly enlarged. In both animals extremely low values prevailed.[19]

Fanno and Rossi[20] have confirmed my observations as to the influence of the thyroid. These authors assume, moreover, that the thyroids, and especially the parathyroids, furnish an internal secretion, the purpose of which is to alter the chemico-physical condition of the blood, or, in other words, to adjust its viscosity.

In seeking a standard for the viscosity of the blood, use has been made of the viscosity of distilled water which, at a temperature of 37 C., shows the value of 4,700. This figure being regarded as one, it must be clear that the viscous resistance of any fluid of greater concentration must be expressed in terms of multiples of one. As has been stated before, the viscosity of the blood differs even in individuals of the same species. On a mixed diet dogs showed the average coefficient of 950. The viscosity of this type of blood is, therefore, five times greater than that of distilled water at 37 C. Marked variations are present even under normal conditions. Thus, it was also possible to produce changes by feeding. When food was withheld the viscosity decreased, while continued feeding with meat induced high values. After an exclusive intake of fat or carbohydrates the viscosity showed intermediate values.[7]

The experiments on rabbits proved that the blood of these animals is also influenced by feeding. The coefficient K showed the average value of 1,346, the viscosity of rabbits' blood[7] is, therefore, only 3.4 times greater than that of distilled water at 37 C. The blood of the cat possesses an intermediate resistance, and again, the blood of the turtle or of the frog[21] possesses a viscosity very much below that of the rabbit.

This regular decrease of the viscosity, occurring as it does in complete harmony with the concentration of the circulating fluid, quite naturally leads to a consideration of the relationship existing between this peculiarity of the blood and the specific gravity. The concentration of a fluid and its specific gravity being in a large measure synonymous, it might be assumed at first thought that the viscosity must increase and decrease with the specific gravity. On this basis the determination of the viscosity would indeed be superfluous; at least such a procedure would no longer be necessary, so soon as definite comparative values for the viscosity and for the specific gravity had once been established. Thus, having gained accurate data regarding the concentration of a fluid by one method or another, we could easily deduct from these the necessary facts pertaining to the viscosity.

Although such a procedure is permissible in a large number of cases, it is not always infallible. While in general it may be said that the specific gravity and the viscosity of the blood pursue a parallel course, such a close relationship is not always clearly in evidence. It happens quite frequently that a sample of blood having a low specific gravity, possesses a high viscosity, and *vice versa*, and hence, the factors aforesaid are at times inversely proportional to one another. The qualitative and not the purely quantitative changes in the blood must be held responsible for this discrepancy.

It has been stated in one of the preceding paragraphs that the viscosity of the normal blood of the dog is five times greater than that of distilled water at 37 C. All factors being equal, the heart must, therefore, exert a force five times greater than that necessary to drive water through the circulatory channels. Herein lies the dynamic importance of the viscosity. I have found values considerably higher and lower than this average value, but one example in particular may serve to illustrate the significance of the viscosity more fully. During one of the experiments with chloroform a viscosity more than ten times greater than that of distilled water at 37 C. was found to prevail, and hence, it may be conjectured that in order to drive this type of blood through the vascular system, the heart was called on to more than double its power.

While a temporary increase in the viscosity may not impair the dynamics of the circulation in any serious way, a permanent change, on the other hand, might affect not only the condition of the heart, but also that of other organs. Thus, it seemed probable that one of the causes of cardiac hypertrophy might lie in the increased peripheral resistance caused solely by a greater "thickness" of the blood. Such considerations as these clearly showed at an early date that the viscosity of the blood must have an important clinical bearing; in fact, the part which this factor plays in disease was regarded as quite equal to that of the specific gravity and the number of the red cells.

It cannot surprise, therefore, that the first papers regarding the viscosity of the blood of animals as outlined above, were soon followed by attempts to determine this factor for the "living" human blood. Clearly, the elaborate but exact method of Hürthle could not be applied to persons. The only procedure for obtaining at all reliable results consisted in the quick removal of a small quantity of blood from a distal part and in the hurried passage of it through a viscosimeter. Even hirudin, a substance used to prevent the coagulation of the blood after its withdrawal, seemed to be contraindicated, because any agent which will alter the state of the blood to this extent, cannot be expected to leave its viscous resistance unchanged.

Using a U-shaped glass capillary very similar to the one employed by Ostwald in his determination of the inner friction of various fluids, Hirsch and Beck[22] made

18. Lommel: Arch. f. klin. Med., 1904, lxxx, 308.
19. Zentralbl. f. Physiol., 1904, xviii, 493.
20. Fanno and Rossi: Arch. di Fisiol., 1905, ii, 609.
21. Burton-Opitz: Am. Jour. Physiol., 1902, vii, 243.
22. Hirsch and Beck: Arch. f. klin. Med., 1901, lxix, 503; lxxii, 560.

the first successful experiments with human blood. These authors obtained the coefficients 4.73 to 5.89 at a temperature of 38 C. These values imply that the viscosity of the human blood is 5.1 times greater than that of distilled water of 38 C. It is to be noted, however, that the blood was obtained from a distal part after venous stagnation by the procedure of venesection. We have seen previously that a superfluity of carbon dioxid increases the viscosity, and hence, it seems entirely probable that the values cited here are slightly in excess of those actually existing. Bence, who employed a similar method, gives an even higher average value, namely, 5.4. Hirsch and Beck also examined the blood of patients suffering from nephritis, but were unable to draw any definite conclusions.

During the winter of 1903 I used in this laboratory a U-shaped capillary glass tube, one end of which carried a funnel-shaped enlargement for the reception of the fluid to be tested, and the other a bulb large enough to contain 1 c.c. of it.[23] To begin with, the funnel of this viscosimeter was filled with distilled water. Gravity being used as the driving force, the time was determined which was required to fill the bulb. Human blood from a small cut in the end of a finger or in the lobule of the ear, was then permitted to drop into the receiving cup of this viscosimeter. Naturally, the time necessary for the collection of 1 c.c. of blood was very much longer than that required for the filling of the bulb with distilled water.

A few years later I made use of a glass tube similar to the one employed for the counting of the red cells.[24] The human blood, freshly collected in a small receptacle, was drawn into this tube by a constant suction. The index of the viscosity was obtained by ascertaining the difference in time necessary to fill the bulb with blood and with distilled water. Heubner[25] used an Ostwald viscosimeter, but prevented the coagulation of the blood by hirudin or by cooling, a procedure which seems open to objections. Hess[26] constructed an instrument by means of which he obtained values ranging between 3.75 and 5.75, and the average coefficient 4.6.

The experiments here cited show on the whole a relationship of 1 : 5; hence it may be said that the viscosity of human blood is about five times greater than that of distilled water. Human blood possesses, therefore, very nearly the same viscous resistance as the blood of the dog. It must be remembered, however, that in the early experiments with the dog the blood was taken directly from central channels, while in the case of human blood peripheral blood-vessels were tapped. It seems entirely probable that physical factors may cause a slight discrepancy, in that the blood circulating through capillary areas may be somewhat less concentrated than that contained in the larger channels. For this reason it is possible that the "molecular friction" of the arterial blood in and near the capillaries is less; however, the difference would be slight in all cases.

O. Müller[27] has recently succeeded in reducing the viscosity of human blood by means of potassium iodid, and it seems fair to assume that this salt produces this effect, not by its mere presence, but by a direct action on the blood. Romberg[28] attributes the beneficial action of this salt in arteriosclerosis to its power of lessening the viscosity.

It can readily be gathered from the foregoing that the employment of a viscosimeter meets with many obstacles. Although the results have been gratifying in so far as normal viscosity-values have been established for the human blood, it seems doubtful whether this method will ever be perfected in a way that small variations can be accurately and safely recorded. Great clinical value can hardly be attached to a method that will depict solely such changes in the viscosity as occur, for example, during leukemia or polycythemia. Other more simple means can be employed with greater safety for the purpose of diagnosing these conditions. Nor do the limitations lie wholly in the method. One of the gravest obstacles encountered in establishing slight differential values, exists in the variability of the viscosity itself.

Reference must finally be made to the dynamic effect of the viscosity on the blood-flow. Clearly, other factors remaining constant, the magnitude of the flow must become greater the less the viscous resistance. The reverse relationship must also exist.

This view, founded on the belief that the law of Poiseuille applies not only to rigid tubes, but also to the vascular systems of animals, has been severely criticized by Heubner.[25] The objections of this author have been overcome, however, by the experiments of du Bois-Reymond, Brodie and Müller.[29] Certain organs, freshly removed from the body, were perfused with defibrinated blood. While the quantity escaping was accurately determined, the viscous resistance of the perfusion-fluid was either lessened or increased.

These experiments showed unmistakably that the blood-flow changes in harmony with the viscosity. If the latter increases, the flow decreases proportionately. This parallelism establishes, therefore, the applicability of the law of Poiseuille to the diverse elastic tubules of the vascular system.

While no doubt the viscosity may play a very important part under certain conditions, it must also be said that clinicians have attached altogether too great an importance to it. To be sure the viscosity can develop into a mighty circulatory factor, but only when other dynamic conditions favor its development. Ordinarily, the effect of the viscous resistance is no doubt readily neutralized. Thus, an increase in the viscosity does not always call for a greater activity of the heart, because an enlargement of the vascular channel will serve equally well to keep the magnitude of the blood-flow constant. Normally, therefore, we have the various vasomotor reactions by means of which changes in the viscous resistance of the blood can be fully equalized and overcome. Only if this nervous mechanism is rendered more or less sluggish by disease or otherwise, can the viscosity exert a more powerful influence.

The effect of the viscosity may also be upset by the driving force. Changes in the frequency and the power of the heart will fully compensate for any alteration in the viscous resistance of the blood.

It may be said that the blood-flow is dependent on three factors, namely, on the driving force, on the peripheral resistance as formed by the size of the distal blood-bed, and on the viscosity. Normally, all three influence one another constantly, the flow being the product of all three. Although I believe that the viscosity is the weakest of these three dynamic forces, normally, I do not wish to emphasize this point too

23. A similar tube was subsequently employed by Dunning and Watson, Proc. Roy. Soc., London, 1906, lxxviii, 328.
24. Burton-Opitz: Proc. Soc. for Exper. Biol. and Med., Dec. 19, 1907.
25. Heubner: Arch. f. exper. Pathol., 1905, liii, 280.
26. Hess: München. med. Wchnschr., 1907, No. 45. Still more recently a viscosimeter has been described by Münzer and Bloch, Med. Klinik, 1909, No. 9.
27. Müller: Deutsch. med. Wchnschr., 1904, p. 1751.
28. Romberg: Kongress ber. inn. Med., 1904, p. 60.
29. Arch. f. Anat. u. Physiol., 1907 (Suppl.), p. 37.

strongly. At all events, regarded in the manner described above, the viscosity represents an independent dynamic power which, although slight normally, will become overwhelmingly great, if other factors favor its development.

437 West Fifty-Ninth Street.

THE PERPENDICULAR PELVIS IN THE HUMAN FEMALE AS AN INDEX OF RETARDED DEVELOPMENT IN ITS SOFT PARTS

FRANKLIN H. MARTIN, M.D.
CHICAGO

For five years, in the examination of women, I have carefully observed the relation of the axis of the pelvis to the perpendicular axis of the body, and noted the bearing of this relation on the developmental conditions of the soft parts attached to the bony structure. These examinations have not always been made with as much accuracy or system as should have been observed for the purpose of arriving at facts to establish scientific conclusions, but the observations have been conscientiously conducted and the conditions found have convinced me that my facts are sufficiently conclusive and practically suggestive to justify me in presenting them to the profession.

Fig. 1.—(W. J. S. McKay). Approximately normal pelvis. The soft parts are not correctly drawn to represent the normal position. The cervix of the uterus should occupy a higher position nearer the hollow of the sacrum. The whole floor of the pelvis should be higher and more in line with a line drawn from the lower border of the symphysis and the tip of the coccyx.

In the approximately normal pelvis the upper plane has an inclination of between 55° and 60° with the horizon, and the lower plane an inclination of from 5° to 10° with the horizon, each plane looking upward and forward.

A profile of the pelvis shows the sacrum with a backward tilt and the tip of the coccyx occupying a position 3½ inches posterior to a perpendicular line falling from the promontory of the sacrum (Fig. 1). The axis of the true pelvis, represented by a curved line corresponding to the anterior surface of the sacrum between the external and internal planes at their center, has an inclination of approximately 50° with the horizon, or fully 40° with the axis of the spinal column. Slight variations of inclinations of the pelvis from these arbitrary figures occur without peculiar significance, and even the change in position of the individual may change the inclination of the pelvis with the long axis of the body several degrees. Approximately, however, the range of figures given will cover the normal adult female during her menstrual years if the observation is made with the individual standing in the military attitude.

Variations from this normal inclination of the pelvis occur in two directions, both of which, as they become exaggerated, point to important departures from health and strength; one variation being the exaggerated direction of the pelvis backward, giving rise to an abnormal lordosis; the other variation being less dipping of the pelvis, giving rise to a perpendicular pelvis and thus eliminating correspondingly the depth of the lumbar curve of the spine. It is of the latter or the perpendicular pelvis that I wish to speak.

From the beginning of the discussion of Glenard's disease until now, attention has been called repeatedly to the form of the skeleton bearing a certain relation to visceral prolapse. In 1907 (*Surgery, Gynecology and Obstetrics*, Vol. IV, page 167) I endeavored to establish the fact that the coincidental existence of the peculiar skeleton form and abdominal visceral prolapse was definitely an evolution or individual retardation of development. In that article I pointed out definite developmental defects of the abdominal viscera, as I had observed them in abdominal sections in my routine surgical work (Figs. 2, 3 and 4). Continued observation has only strengthened my belief in the importance of the skeleton variation in pointing to coincidental visceral and muscular irregularities. This is particularly true in connection with variations in the pelvis. The perpendicular pelvis is one of the peculiarities of the skeleton defects that I covered in the paper already quoted.

Fig. 2.

Fig. 3.

Fig. 2.—(J. C. Webster). Vertical mesial section of six months' fetal pelvis. The pelvic skeleton has not rotated, showing the perpendicular type. Retarded development often leaves the adult pelvis in this condition.

Fig. 3.—(J. C. Webster). Vertical mesial section of fetal pelvis at eight months' gestation. Note the perpendicular pelvis, not yet rotated. The rotation is more than in Figure 2, representing six months' gestation, and less than in Figure 4, representing term or birth.

The defects of the soft parts of the pelvis that I have definitely observed as coincident with the failure of the pelvis to rotate are peculiarities in the following parts:

1. Peritoneum
2. Uterus
3. Bladder
4. Ligaments
5. Rectum
6. Pelvic floor
7. Muscles
8. General appearance

I. PERITONEUM

The most striking peculiarity of the peritoneum which to my mind marks a failure of development in the normal perfection of the individual, is a distinctness

of this membrane from the underlying tissue, which gives it the appearance and feel of looseness of attachment, and makes it easy to pick up in folds between two fingers. Its color is darker than the fully developed human peritoneum, slightly blue in color rather than pink, and has a glistening, polished appearance rather than the normal dull aspect. This is independent of the amount of subperitoneal fat, as when fat exists, it, like the subperitoneal connective tissue, is easily separated from the peritoneum, while in the normal it is almost inseparable.

In such cases these characteristics of the peritoneum are particularly noticed on the round ligaments, over the broad ligaments, and on the surface of the bladder.

Another noticeable peculiarity of the peritoneum is its relation to the uterus and the broad ligaments, and in its covering of the deep tissues, such as the ureters, the round ligaments, the sacro-uterine ligaments, the bladder, and even the lower bowel, viz: a tendency to furnish a pseudomesenteric attachment for these various structures, causing them to stand out, as is frequently seen in the lower animals.

II. UTERUS

This organ gives definite evidence in these defective cases. The sulcus between it and the bladder is deep and wide. The fundus occupies a position back of the median line of the axis of the already too perpendicular pelvis. Its broad ligaments are loose and thin and the posterior surface of their pelvic deflections are attached back of the axis of the pelvis instead of slightly in front, as is the case in the normal, and their anterior deflections forward on to the pelvis are too close to the posterior layers and widely separated from the layer that covers the round ligament (thus giving those ligaments the distinction of a mesenteric attachment referred to above), while this anterior layer should blend with the peritoneum covering the round ligaments and should form its attachment to the pelvic wall well forward in order to give the uterus a support well in front of the axis of the pelvis.

Inspection of the cul-de-sac of Douglas in these cases demonstrates two distinct folds of peritoneum passing around a detached lower bowel, covering exaggerated sacro-uterine ligaments which usually have become inordinately stretched. In the normal, the rectum is buried, its mesentery has been obliterated, the peritoneal folds around the rectum blend with it, the cul-de-sac is closed and the round ligaments are scarcely perceptible, while the cervix is snugly held in the hollow of the sacrum.

The central loose attachment of the broad ligaments in these perpendicular pelves and the long uterosacral peritoneal attachment gives the uterus a perpendicular position which readily forecasts its future behavior.

III. BLADDER

One of the most characteristic signs of arrested development in these cases is the peculiarity of the bladder. It appears, according to the degree of the defect, a more or less pedunculated sac covered with a blue, crinkly, loose peritoneum, instead of the normal sessile sac, almost obliterated beneath a broad, closely attached peritoneum of pinkish color.

IV. LIGAMENTS

1. In the well-developed woman the urachus is practically obliterated. In the defective type this embryonic vestige is relatively conspicuous and lies as a loose cord beneath the peritoneum. Occasionally the arrest of development is so early that it remains a patulous tube. The size of the urachus is in inverse ratio to the completion of development of the individual.

2. The round ligaments present definite evidence of developmental conditions. Normally they are well buried beneath the peritoneum, are large and muscular and sweep well in front, reaching the parietal peritoneum well forward in a manner that broadens the peritoneal attachment of the pelvic end of the broad ligament. Its peritoneal covering is practically continuous with that of the balance of the broad ligament, the two together making a wide blending of the broad ligament well in front of the axis of the true pelvis and definitely determining the top of the uterus forward. In the defective type the round ligament is small, is easily picked up with its peritoneum, reaches the parietes in a line near the axis of the pelvis instead of well forward of it, and instead of being a portion of a broadly attached broad ligament is separated from that ligament by a deep sulcus. The uncovered ligament is thin, rudimentary and with little muscular tissue.

Fig. 4.—(J. C. Webster). Vertical mesial section of fetal pelvis at birth. Rotation is beginning and the tip of the coccyx is elevating and rotating backward, showing a tendency toward the normal tilting.

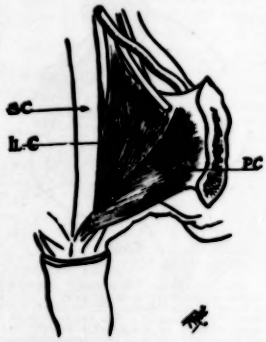


Fig. 5.—(Peter Thompson). Flexor muscles of tail of monkey. Left side from within. SC, sacrococcygeus; IIC, iliococcygeus; PC, pubococcygeus.

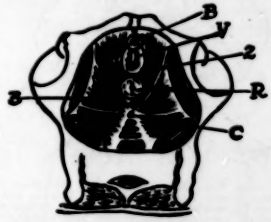


Fig. 6.—(J. C. Webster). Muscular floor in human female denuded of its fascia. B, neck of bladder; V, vagina; 2, anterior fibers of levator ani (pubococcygeus muscle); 3, lateral fibers of levator ani (obturator coccygeus muscle); R, rectum; C, coccyx.

3. In the well-developed woman the sacro-uterine ligament is practically *nil* as a true ligament. It is an unnecessary structure in these cases because of the close attachment of the lower bowel, and the high deflection of the peritoneum back of the cervix, to the sacral parietes of the pelvis. When the sacro-uterine ligaments stand out as distinct structures beneath loose folds of peritoneum, a defective blending of the accompanying structures just referred to may be observed.

4. As already touched on in my remarks on the peritoneum, the broad ligaments vary much according to the developmental state of the individual. The attachment of the broad ligament in the defective individual is in line with the axis of the pelvis instead of well in front of that line, first, by the posterior layer of the broad ligament being deflected on to the pelvis farther back than normal, and second, on account of the base or the pelvic attachment of the broad ligament being much narrower; third, because the broad ligament is much looser in structure and contains less connective and fatty tissue; the peritoneal layers are longer and hang in folds, and finally, the anterior layer of the peritoneum comprising the broad ligament, is not deflected well forward of the axis of the pelvis as it blends with the parietal peritoneum.

uteri. It is in these cases that two loose folds of peritoneum some distance above the cul-de-sac encircle the rectum and give dignity to the sacro-uterine ligaments.

VI. PELVIC FLOOR

Next to the observance of the straight spine, or the showing of a radiograph, nothing is more significant of the developmental defect characterized by the perpendicular pelvis than the simple inspection of the external portion of the floor of the pelvis as the patient lies on the examining table in the horizontal position with limbs slightly flexed and knees separated, with feet supported on stirrups at the level of the examining table. The contour of the presenting floor is unnaturally long anteroposteriorly, giving an oval appearance. The coccyx end of the oval projects further over the end of the table than the pubic end. The labia majora are long and narrow and the vaginal opening is situated far back instead of just beneath the pubis, and if the labia are slightly separated, the vagina will be shown gaping or open. Farther toward the coccyx, projecting beyond the vagina, is the anus, also too far back, with a pointing rim of integument around it, and still farther from it, a slight pouching of the posterior portion of the floor of the pelvis generally. From the sides of this sacculated,

Fig. 7.—(Peter Thompson). The floor of the human female pelvis from below. Note the powerful puborectalis and coccygeus which surround the vagina and swing the rectum and vagina toward the pubis (PC). These muscles in the defective human female are not present, or are very imperfectly developed. A, anus, V, vagina; PC', pre-anal fibers of pubococcygeus; PC'', puborectalis; IIC, iliococcygeus; IC, coccygeus.

Fig. 8.—(Peter Thompson). Section of pelvis showing pelvic diaphragm of fully developed human female. V, vagina; R, rectum; IC, coccygeus; IIC, raphe formed by iliococygel; SR, sphincter recti; SAP, sphincter ani externus profundus; PC, pubococcygeus.

Fig. 9.—(Peter Thompson). Muscles of perineum in human female. SV, sphincter vaginæ; TPS, transversus perinei superficialis; ESP, sphincter ani externus profundus. The puborectalis is one of the muscles that often fails to develop in the defective female. The transversus perinei is another muscle that often fails to differentiate. The absence of these muscles makes a notable weakness in the pelvic floor.

The ligaments binding the different bones of the pelvis together are sometimes noticeably loose in their attachment, giving rise to perceptible movements between their parts.

V. RECTUM

In the well-developed adult the rectum possesses no mesentery for a considerable distance above the cul-de-sac of Douglas, this having disappeared in the process of development and being replaced by a broad attachment of the posterior wall of the viscus to the connective tissue on the anterior surface of the sacrum. The peritoneum, however, covers the anterior portion of the rectum until it leaves it as it is deflected forward to line the bottom of the cul-de-sac of Douglas. In retarded development, however, the rectum will persist in a mesentery and the cul-de-sac of Douglas is frequently deeper than normal, thereby depriving the posterior wall of the vagina of its normal high attachment to the firmly anchored rectum, and leaving a loosely attached cervix loose, unnatural protruding floor, bow off flat, atonic gluteal muscles.

On careful analysis of this not uncommon appearing floor of the pelvis (see floor of pelvis in the fetus as shown in Figures 2, 3 and 4), we readily see that the lower end of the spine projects an unnatural distance beyond the symphysis instead of occupying a position above it as in the normal individual. The vulvar opening is located posterior to its normal position and on a plane below a line drawn from the symphysis to the coccyx; its posterior wall is separated from its anterior wall while in the normal the vaginal opening is immediately beneath the symphysis, the posterior vaginal wall snugly hugs the anterior wall and there is no protruding of its mucous membrane.

The anus in the normal does not appear as a projecting point on a protruding sac hanging sling-like below the coccyx and the symphysis, occupying a position near the coccyx, but is well forward near the center of the floor of the pelvis (Fig. 1), on a plane level with the

symphysis, with its margin firmly contracted, constituting the center of a well-protected floor, having the appearance of adequacy and strength.

What is the explanation of this important difference in the floor of the human female pelvis?

It is the difference produced by arrest of development of the muscles and fascia of the human pelvis before they reached the perfection necessary to the assumption of the new duties that must be assumed by the pelvic floor of an animal occupying a perpendicular position (Figs. 2, 3 and 4), and those muscles and mechanisms which have attained the development that fits them to support the human pelvic floor and its superimposed load.

Fig. 10.—The transversus perinei.

Even a cursory study of the comparative anatomy of the pelvis of the higher and lower animals affords us a simple explanation of the phenomena of the defective pelvic floor depicted above.

In the lower vertebrates, with few exceptions, like the seal, the kangaroo or other animals that frequently assume the vertical position, and of course the higher monkey families, the levator ani proper, that is, a muscle of support for the rectum, does not exist, but appears as the tail muscle, its principal function being the management of that caudal appendage (Fig. 5). As the tail disappeared and the higher animal developed, with a disposition to assume the perpendicular, the levator ani remained attached to the coccyx and the sides of the sacral vertebra, and extended its other pelvic attachments forward from the ischium as far as the pubis, and while it constituted itself in this extension an upper floor or second diaphragm to the pelvis it also assumed other functions. Of course, this change added the important function of supporting the superimposed viscera. As the rectum became a perpendicular tube its upper portion required additional support, and this was afforded by this tail muscle through which it passed and the pubic extension in the form of a new muscle, the puborectalis, which extended from the pubis to the rectum, and after combining with the extension backwards (the pubococcyx) grasped the rectum in a sling (Fig. 6). These muscles elevate the rectal tube and the anterior one, the puborectalis, elevates it and draws it toward the pubis while the two together are powerful factors in elevating the whole human pelvic floor.

It is this powerful anterior mass of muscles of the levator ani that can be felt ¾ of an inch above the vulvar outlet on either side of the vagina, and that supports or swings the vagina well forward beneath the pubis. This whole tail muscle when it is developed to the human needs makes a veritable second floor to the pelvis (Fig. 7).

When these muscles fail to develop to their highest perfection, the anterior fibers, which are so important to the support of the human pelvic floor, are the first to fail, as they are the last to develop, and the picture of the projecting floor with pouting anus and open vagina is presented (Fig. 8).

Below the levator ani proper, beneath the integument, we get the external sphincter and more superficial muscles of the pelvic floor. The sphincters of the rectum and the vagina which penetrate in the human alone, the portion of the trunk that practically supports the entire contents of the abdomen, viz., the floor, must of necessity be relatively much stronger than in the animals in which vaginal and rectal outlets are not subjected to this additional strain. In the well-developed woman this is the case. The sphincter ani in the human being is a thick muscle extending around the anus for a height of an inch or more; it is divisible into three layers, the external encircling the anus decussating forward and back, the middle attaching it to the coccyx, the only primitive arrangement left, and in front joining the vaginal sphincter and on the sides reaching the spines of the ischii. The deep layer, thick and strong in the human, joins with the levator ani fibers of the puborectalis and coccygeus (Fig. 9).

The transversus perinei, which is rudimentary in some lower vertebrates, becomes a real entity in the perpendicular individual. It is a double bundle of fibers deep and superficial on either side of the perineum, decussating between the anus and vulva and finding attachment to the rami of the ischium and the white line in front of it (Fig. 10).

Thompson found the muscle absent in 46 per cent. He quotes Lesshaft as finding it absent in eighty cases; on both sides in 23 per cent. and on one side 68 per cent. According to Hall, quoted by Thompson, these muscles

Fig. 11.

Fig. 12.

Fig. 11.—(W. J. S. McKay). Showing inevitable tendency of uterus and pelvic floor in congenitally defective female. The perpendicular pelvis subjects the pelvic contents, including uterus, to a disadvantageous pressure, and the defective development of the muscles and fasciæ of the pelvic floor offers no resistance to the misplaced uterus.

Fig. 12.—The congenitally defective type. Note straight back, perpendicular pelvis, projecting lower abdomen. These individuals have flat chests, long arms and narrow costal arches and are usually referred to as the "neurotic type." (Drawn from photograph from life.)

are derived, too, from the levator ani. The sphincter vaginæ superficialis is a muscle that is rudimentary in all but the most highly developed females.

When these human muscles of the pelvis fail to differentiate and fail to develop from the tail muscle of the inferior vertebrate, the floor of the pelvis in that particular individual is incompetent and presents the pointed floor with its gaping openings.

VII. MUSCLES

Another evidence of the lack of higher differentiation in these cases is the lack of firm and adequate development of the voluntary muscles of the lower abdomen, external pelvis and thighs which play such an important part in maintaining the individual in the erect position. The strong pyramid of muscles immediately above the pubis are represented by soft yielding structures that soon give way and give rise to a marked projection of the abdominal wall. The gluteal muscles are flat, soft and weak and these, with the thin thigh muscles, present a picture of weak mechanism unsuited to their task.

VIII. GENERAL OUTLINE

These individuals of the defective type exhibit evidences of their characteristics that are unmistakable. The defective skeleton is connected with soft and defective ligaments; the defective muscles, whole fasciculi and even whole muscles of which may be absent, are held together with defective layers of fascia, and are terminated with defective tendons. The connective tissue and the fat deposits are defective and the skin covering all is loose, discolored and coarse. Its very appearance is uninviting, as it is unnatural and inadequate (Fig. 12). It is an animal predestined to failure in its higher attributes because its functions are those of the higher biped while its mechanism is that of a quadruped.

CLINICAL SIGNIFICANCE

Back of it all, the neurologist will say, is "a defective nervous system." If this be true, the nervous system, too, has differentiated against many of these individuals in a relatively small portion of their anatomy—in some of their bones, a few of their viscera, and their muscles leaving the brain, often a brilliant one, with many of the other functions characteristic of the higher individual well developed, demonstrating a normal mechanism for at least a portion of the body.

I only want to add that a confirmation of these facts I have so inadequately depicted can be obtained by any of us every day.

The perpendicular bony pelvis can be observed as the patient stands before us. The defective pelvic floor is easily recognized on the most casual inspection. The lack of development of the front portion of the levator ani, as exhibited in the puborectalis, the sphincter vaginæ, the transversus perinei, is easily ascertained by simple palpation of the perineum and the vaginal walls. The central position of the uterus and the failure of forward blending of the broad ligaments are immediately revealed in any lower abdomen operation. The defective peritoneum, projecting bladder, the small round ligaments and the exaggerated sacro-uterine ligaments are easily demonstrated in our routine abdominal work, while the Trendelenburg position and deep observance of the pelvis reveals the unattached rectum and the deep cul-de-sac of Douglas.

31 North State Street.

Bacteriologists Please Note.—We do not know just how to classify it, perhaps as a new phase of anaphylaxis, this smoldering of a microbe, referred to in a recent letter written to the *Scranton Times:* "When the earthly crown is fading in the twilight of the western light of life, and life's sun is setting in the glamor of the darkness that precedes their exit from life's stage, and the activities thereof, the smoldering microbe of the faith of their fathers becomes a lamp to their feet and a light in their way in their journey to eternity."

AN INDEX TO THE GENERAL BLOOD-PRESSURE

THE VENOUS PULSE AND BLANCHING OF THE RETINAL VESSELS INDUCED BY PRESSURE ON THE EYEBALL *

MELVILLE BLACK, M.D.

Professor of Ophthalmology, Medical Department, University of Colorado; Ophthalmologist to St. Luke's Hospital

DENVER

By pressure made on the eyeball with the finger placed over the junction of the eyelids at the external canthus, the intra-ocular tension can be materially increased. The tendency of this pressure is to empty the veins of the retina, to inhibit the inflow of blood into the retinal arteries, and to produce the venous pulse.

If, while this pressure is made, one watches the retinal circulation of a young child, the pulsation of the veins on the disk will be first observed; then the arteries will be seen to diminish in size and the veins to be almost emptied of blood. This is because the vessel walls are soft and resilient. In old age the walls of the vessels offer more resistance and scarcely any visible effect from the pressure is observable. In some very elderly people, however, the venous pulse is seen and a decided blanching of the vessels takes place while making steady strong pressure. These are the exceptions and only go to prove that a small amount of vascular hardening has taken place, or that this individual has always enjoyed a normal blood-pressure. It is admitted that this test is not of great value in very elderly people, for the reason that almost all of them will show little or no change in the retinal circulation from pressure. Its greatest value is in young or middle-aged subjects. If, while examining the eye-grounds of a patient aged 30, we apply pressure to the eye-ball and find that we cannot cause the venous pulse or blanching of the retinal vessels, we have good reason to suspect increased blood-pressure, and almost invariably the sphygmomanometer will confirm our suspicions. The early recognition of high blood-pressure may mean much to this individual.

A very striking picture is presented in people who have dilated hearts with very low blood-pressure. Here pressure on the globe causes a decided emptying of the arteries, with but little effect on the veins. When arteriosclerosis is well advanced, no matter what the age of the subject, or whether the general blood-pressure be high or low, little or no blanching of the retinal vessels will take place from making pressure on the globe, and it is equally difficult to produce the venous pulse. I have now given the matter close attention for four years, and I find when referring a patient to an internist for examination that I can almost invariably foretell what the blood-pressure findings will be. This does not mean that this pressure test renders the use of the sphygmomanometer unnecessary. On the contrary, it means that the ocular findings warrant a careful estimation of the blood-pressure by the use of the sphygmomanometer.

I have been unable to find in the literature any reference to this pressure test. If any one is before me in having published anything on this subject I shall be only too glad to give him due credit and to apologize for stealing his thunder.

329 Majestic Block.

* Read in the Section on Ophthalmology of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

ABSTRACT OF DISCUSSION

DR. H. S. MILES, Bridgeport, Conn.: This test of Dr. Black's seems to me to be a very valuable one. As we are now paying much more attention to blood-pressure than formerly, it must be a great advantage to have a ready and reliable index which we can easily apply in a few moments.

DR. EDWARD JACKSON, Denver: I have made some application of the test, and am sure that doing it frequently it will every once in a while throw very interesting and important light on our cases. By a little additional pressure, or rather firm pressure, one can very often get the arterial pulse, and perhaps this is a more direct means of estimating the arterial blood-pressure than by the venous pulse. In a patient on whom I applied the test within the last two weeks, I found it impossible to produce any change in the arteries of any arterial pulsation by pressure that commenced to make the cornea steamy. Of course, this indicated high blood-pressure. While we have the sphygmomanometer to which, as Dr. Black says, we will refer to settle these questions, I think outside of that it would be perhaps the most valuable means of testing the blood-pressure. It is the same principle that is used in testing the capillary circulation by emptying the capillaries by pressure, though it is the length of time that it takes to refill that indicates the condition of the circulation. In the veins of the eye also the time it takes to refill is valuable and worth watching. I am inclined to think that gives more information about the general state of the intraocular circulation. It is a very interesting new method that can be applied very easily. Just place the little finger at the edge of the orbit, and then, pressing as firmly as you choose on the edge of the orbit, make pressure on the eyeball through the lower lid.

DR. MELVILLE BLACK, Denver: I never tried the pressure with my little finger. You press through the lower lid, do you, Dr. Jackson?

DR. EDWARD JACKSON: I usually use my little finger on the lower lid.

DR. MELVILLE BLACK: That might be desirable for the reason that many use the ophthalmoscope with reflected light. I use the electric ophthalmoscope and my hand does not get in the way of the source of illumination. I have been using the index-finger and applying it to the external canthus, but I can see that the other method would be better, because you could keep your hand out of the way.

With regard to the refilling of the small vessels of the disk, that unquestionably would have some value. That is a point I had not especially thought of, but I shall watch closely for that blanching effect on the disk. I had been following more particularly the larger vessels and one can see this blanching way out into the retina very distinctly. In a child one can squeeze almost all the blood out of the vessels, so that there is practically nothing but the empty vessel walls. This is particularly useful in cases of embolism of the central artery of the retina. Here, as is known, there is a certain amount of damming back of the venous circulation, and one can empty the veins so that there is nothing to be seen but the vessel walls. It is important to know exactly how much blood there is in the vessels. One can then readily determine the amount of collateral circulation, or whatever circulation there may be present in these cases. But the test as I proposed it was not for this purpose but to determine the actual hardness of the retinal vessels, and the state of the blood-pressure from the way they act.

Medieval Surgery.—Writing about "Science at the Medieval Universities" in the *Popular Science Monthly*, Prof. J. J. Walsh says that it was in surgery that the greatest triumphs of teaching of the medieval universities were secured. Most people are inclined to think that surgery developed only in our day. The great surgeons of the thirteenth and fourteenth centuries, however, anticipated most of our teaching. We have their text-books of surgery and they are a never-ending source of surprise. We have many wonderful instruments from these early days preserved in pictures at least, that show us how much modern advance is merely reinvention.

RECTAL PROLAPSE*

L. L. McARTHUR, M.D.
CHICAGO

In inviting your attention to this subject and to a modification of existing methods for its correction, I earnestly desire to be understood as advocating the proposed surgical interference only in the true, extensive, reducible, non-ulcerative cases, that resist the usual non-operative treatment. In order to have a proper working basis, it is necessary to specify what form of rectal prolapse is under consideration, since included under this caption one finds every gradation from simple protrusion of mucous membrane through the anus, to a genuine acute external intussusception.

Lenormant suggests four groupings:

1. Ectropion of mucosa through anal ring.
2. Invagination of lower rectum through anal ring.
3. Invagination of upper rectum through lower rectum and anal ring.
4. True intussusception of intestine and mesentery through anal ring.

Of these groupings the first and fourth are not here to be considered. The first, because a simple mucous membrane protrusion is not a rectal prolapse, is due to entirely different factors, and requires only local treatment. The fourth, an acute external intussusception, is an emergency requiring the same prompt interference appropriate to similar conditions higher up the intestinal tract. We have for consideration, therefore, a true prolapse of the rectum of varying degree, the etiologic factors of which have been so revised (Waldeyer, Ludloff, Lenormand, Hofmann) that the older teachings of Esmarch and his school are no longer tenable. It is not now believed nor taught that, provoked by straining, dysentery, hemorrhoids, bladder-stone, etc., the mucosa first prolapses, then the other layers in their sequence. Instead, anatomic researches (Waldeyer), clinical findings (Mikulicz), and operative results (Ludloff, Hofmann) confirm the assertion that this affection is always dependent on a defective pelvic floor. This defect may be (1) congenital or (2) acquired.

Congenitally the peritoneal pouch of Douglas may be, as in other hernial positions, so deep as to constitute a potential hernia, which intra-abdominal pressure later distends and, crowding downward through the anal ring, carries the rectal wall along with it. In the young, the slow development of the coccygeal curve and the associated imperfectly developed musculature, with its consequent lack of support to the pelvic floor, explain the greater frequency in children; the traumata of gestation, those in women. The rarity in the adult male thus becomes clear, age and intra-abdominal pressure being the great causative factors. Considering the great frequency with which we observe extremely high intra-abdominal pressure unassociated with rectal prolapse, we are forced to the conclusion that a defect in the pelvic floor is essential to its formation. With this carrying downward of the floor there is soon formed a prerectal peritoneal sac into which loops of small intestine may, and do, incarcerate, forming the principal complication of this affection, hedrocele.

From an anatomic basis—absence of peritoneal covering on the posterior rectal wall—we can expect to find the hedrocele anterior to the prolapsed mass (Cumston). Reduction of its contents is usually attended with gurg-

* Read in the Section on Surgery of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

ling, and coughing gives an impulse similar to other hernia (Gosselin). Allingham emphasizes the fact that the bowel orifice is at the apex of the prolapsus except when hedrocele exists; it then is directed posteriorly.

Hedrocele being viewed as true hernia—some writers assert it always is—the treatment similar to that for hernia elsewhere must be instituted, one step of which should be the obliteration of the peritoneal pouch, another the permanent reduction of its contents, with later, if necessary, the narrowing of the perineal defect —its hernial ring.

It being the purpose of this communication to present a modification of the best known and most accepted procedure (colopexy) for the alleviation of this ailment, time will not be taken to compare the varying merits of the many methods devised further than to state that the very extensive studies of both Lenormant and Ludloff lead to the conclusion that the upper operation is the one of choice.

Colopexy has always the advantage of in nowise disturbing the function of the rectum and anus; its dangers are no longer real, since out of sixty-eight cases (collected by Lenormant) there were no deaths, and since this procedure alone gave 90 per cent. permanent cures, while the 10 per cent. of recurrences can now be prevented by combining the procedures of several operators. These compare most favorably with the Aufret-Mikulicz resection which gives 7 per cent. recurrences and 10 per cent. mortality. This should, therefore, be reserved for gangrenous, irreducible, incarcerated and ulcerated cases only.

OPERATION: PROLAPSUS RECTI

To anyone making for the first time an effort to correct a rectal prolapse by intra-abdominal fixation there comes an early and startling realization of apparent lack of any satisfactory point to which the prolapsed bowel may safely and permanently be anchored. The dangers attendant on adhesions of any of the movable viscera to the parietal walls are constantly borne in mind in abdominal work, and every effort made to prevent the same. The strongest condemnations have been made of uterine ventrofixation based on unhappy clinical experience, and yet the most favored method to-day for prolapse involves similar incorporation in the line of incision of the rectum and sigmoid. I was not content with the recommendations of Verneuil to suture the epiplocele in the incision; of Quenu to suture the gut to the psoas and iliacus; and of the later writers to include intestinal wall in the incisional stitches, or that of Ludloff to resect the intestine, make an end to side implantation of the sigmoid in the rectum, and implant the upper end of the lower segment in the groin as an artificial anus.

In an effort to avoid a procedure which seemed to me so unsurgical, I sought—and think I found—the solution to the problem in the normal fixed point of the sigmoid. If one pulls up the prolapsed rectum from the emptied pelvis, the first thing to which it could well be attached is found to be the fixed portion of the sigmoid, but the fear of angulation or tearing out of stitches has perhaps prevented its utilization. To overcome this, and yet to secure a strong fixation, I have found that a generous and strong side-to-side anastomosis, using the three rows of sutures of Mayo, between the rectum and the fixed portion of the sigmoid, is most satisfactory, while in nowise leaving such potential dangers as attend incorporation in the cicatrix.

This procedure must not be confounded with that of Carlo, Hoffmann, Mariani et al. who before stitching the colon in the incision made an anastomosis to avoid the dangers of kinking that were made probable by the whipping together, to prevent internal hernia, of the loops of sigmoid to be suspended. It has the advantage of making an attachment to the abdominal wall unnecessary, thus obviating the various dangers attendant thereon, such as gestation, colics, internal hernias, etc. Obstruction of the lumen of the gut is obviated by the anastomosis. O. Samter first called attention to the fact that in cases of prolapsus recti, no matter how strongly one may pull up the gut, the lower part of the Douglas pouch peritoneum, so recently dilated, cannot be put on the stretch, hence were one to be content with a colopexy alone, there would still be the potential relapse. This he prevented by an obliteration of this space through suturing together of its walls, equivalent in effect to the removal of hernial sacs elsewhere. While believing the total obliteration of the pouch as shown in his drawing is unnecessarily extensive, I believe the same result can be accomplished by obliteration of its relaxed lower segment.

In our treatment of these peculiar hernias we have thus far provided for the reduction of their contents and the elimination of their sacs. There remains the correction when necessary of the perineal defect. In practice, however, it has been found that with the suspension of the intestine and the obliteration of the Douglas pouch by suturing from within, the dilated sphincter and relaxed perineal muscles often regain their normal tone and only rarely does it become necessary to make an anal narrowing, by a plication longitudinally of the lower rectal segment posteriorly as recommended by Marchant, or anteriorly and posteriorly after Duval and Lenormand. Though my experience has been limited to but three cases thus treated it has been so encouraging in its results and so relatively easy of performance that I do not hesitate to ask for further trial at your hands.

122 South Michigan Boulevard.

V. 5
1911

ABSTRACT OF DISCUSSION

DR. E. WYLLYS ANDREWS, Chicago: I know of no class of cases more unsatisfactory under the old methods than the complete prolapsus of all coats of the intestine, if treated by the cautery, the lower resection or any of the suture plastic methods.

Colopexy or rectopexy from above has proved to be the best solution for these extensive prolapse cases, in which the whole Douglas pouch has descended, and a long segment of rectum in the intestine inveterately protrudes.

But rectopexy or colopexy has in our hands been subject to complications of the several sorts, especially in the direction of aggravating abdominal pain and possible kinking; and I think possibly kinking depends on imperfect technic in the attachment through some support. We have attached it to the anterior wall, to the psoas magnus muscle and to the tissues of the groin; but the wide loop of the sigmoid still persists as an 18-inch or longer loose movable intestine, which is all the more kinked the more we draw the anus and rectum up by direct traction on the lower rectum.

Part of Dr. McArthur's work was done in the hospital where I have been his colleague; and after his technic was called to my attention, I employed the method which, as you heard in the paper, consists in anastomosing directly by lateral approximation, the short loop of the upper rectum to the fixed portion of the descending colon, where it turns to form the wide loop of the sigmoid. This is anatomically the best fixed support to which to attach the intestine for suspension purposes. It is the only scientific application of the

suspension principle, to suspend one movable viscus to another movable viscus.

In several cases in which I suspended this movable colon to either the anterior or posterior wall or Poupart's ligament I had the pain I speak of. In two cases in which I followed Dr. McArthur's technic I had no other difficulty than the necessity in one of the cases of repairing a sphincter insufficiency which was partly due to rectocele associated with perineal laceration or possibly due to a prolonged dilatation of the external sphincter muscle from the almost life-long existence of this huge prolapsus. This had so overstretched it that at last it had become paralyzed—at any rate, lacking in tonicity. But the final result was satisfactory, though I was obliged to repair a slight prolapse of the mucous membrane only, forming a rectocele, by a sort of perineorrhaphy.

DR. L. L. MCARTHUR, Chicago: I want to call attention to the operation proposed by Ludloff in which he resects the gut, makes lateral implantation of the proximal end and anchors the distal end out at the groin. With this he has a handle to hold his bowel up. To me that is a far more formidable affair than the one proposed in the paper. In the latter the amount of traction which is put on the line of suture is only sufficient to bring the parts nicely together, while holding the rectum well out of the pelvis, but not a great tension, otherwise the stitches might tear out during the first few days of the convalescence. After the union has been completed, of course the adhesion is a good and a strong one.

WOODY PHLEGMON OF THE NECK (RECLUS)*

CHARLES A. POWERS, M.D.
Professor of Clinical Surgery in the University of Colorado
DENVER

HISTORY OF THE SUBJECT

In 1893 Paul Reclus[1] of Paris reported on a form of chronic neck phlegmon of which he had seen three cases and which he believed to have been hitherto undescribed. According to this report the condition generally affects men of over 50 years, depreciated in general health. The urine is generally free; there is no constitutional disease. In these cases a slowly extending boardlike infiltration develops in the neck, sometimes in front, sometimes at the side. The development of the affection is always slow; it may extend over many weeks. The skin gradually becomes of a wine-red color, or purple or bluish. Fever and pain are not observed. At first the picture is that of a developing skin cancer. After a duration of five or six weeks edema and fluctuation come on and pus is apt to be discharged spontaneously or after incisions. In one case of Reclus the patient suddenly succumbed to edema of the glottis. In his other cases the phlegmon slowly healed after evacuation of the pus.

Reclus[1] gave a further account of this woody phlegmon of the neck in 1896, adding two cases to the three which he had hitherto observed. All of the cases occurred in men broken down in general health. Syphilis, diabetes, Bright's disease and other constitutional conditions were absent. The patients were much depressed; their only complaints were of difficulty in swallowing and in moving the neck. In all of his cases edema was present, and the skin slowly became of a wine-red color; there was a very slow formation of pus, and healing was slow. In one of his cases a bacillus like that of diphtheria was present and this patient improved under antidiphtheritic serum.

Reclus believed that this chronic inflammation might also occur in other portions of the body, though the neck was most often affected. It might easily be confounded with cancer, actinomycosis or tuberculosis. He believed that the condition owed its origin to pyogenic microbes of lessened virulence. Unknown factors might be associated.

These observations of Reclus did not lack confirmation. Kusnetzow[6] reported on a man of 69 years, much depreciated in general health, who had suffered Ludwig's angina two months before. A hard mass slowly developed between the lower jaw and the larynx. The skin became hard, there was no fever. The condition was thought to be cancer. Compresses slowly produced a softening at the center of the mass and a small abscess containing broken down tissue was opened. The hardening slowly passed down the left sternomastoid muscle and a new abscess was opened. One month later a suppurating gland was opened in the right subclavicular space. Healing took place after four months of illness. A weakened form of streptococcus was found in the pus.

Janson[11] reports a case occurring in a young woman of 25 years after a mild attack of streptococcus angina. Recovery after seven weeks. A similar case, due to the *Diplococcus pneumoniæ*, also secondary to an angina, is described by Jursdell and Svensson.

Sick[22*] of Hamburg reports a case of woody phlegmon occurring in a woman of 42 years who five years previously had suffered from a pneumonia with a subsequent mastoiditis requiring operation. She presented the characteristic infiltration, with swelling and skin discoloration extending from the mastoid process and maxillary border as far as the middle of the neck and downward to the clavicle. Complete, slow recovery took place under expectant treatment with large, moist dressings. Sick accepts the description of Reclus and emphasizes the fact that the differential diagnosis must exclude neoplasm as well as actinomycosis.

Further reports, each on one or two cases, are made by Moreau,[20] Sotis[32] and others. An excellent description is to be found in the "General Surgery" of Lexer and Bevan,[35] as well as by E. Wyllys Andrews in Keen's "Surgery."[36] Da Costa[10] of Philadelphia says that woody phlegmon is always dangerous and frequently fatal. He suggests the induction of suppuration by inoculations. Schmincke[25] tries, from the findings in one case, to make out a resemblance to neoplasm and characterizes the disease as cancer-like or cancroid. In this he was wrong: the condition is not neoplastic but inflammatory. The contention of Schmincke was promptly contradicted by Merkel,[17] Fichtner[28] and others.

An interesting observation is made by Antonio de Cortes.[37] His patient was a man of 27 who early in October, 1908, first noticed an induration in the suprahyoid region. This was of a stony hardness. It gave

* Read in the Section on Surgery of the American Medical Association at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

* Note. July 13, 1911. I am this day in receipt of a letter from Hofrat C. Sick, in which the distinguished Hamburg surgeon says: "The article on wooden phlegmon, to which you refer, is by my nephew, Dr. Paul Sick, of Leipsic. I have personally been able to certify but one case of woody phlegmon in my practice, a brief history of which is as follows: A workman suffered severe pain in the left side of his abdominal wall after strenuous physical efforts. Some fourteen days later a hard, board-like infiltration was found, involving the entire left anterior abdominal wall, extending to the linea alba within and to the lumbar region posteriorly. There was no fluctuation; there was moderate pain; there was slight fever. No evidence of suppuration from the peritoneal side. The infiltration of the abdominal wall was so extensive that one could make it out bimanually through the rectum. A free incision was made through the muscles and fascia to the peritoneum. The tissues were strongly infiltrated, but not suppurating. Here and there areas of granulation tissue were found. There was no history of syphilis and the Wassermann reaction was negative. Microscopically, nothing was found excepting inflammatory tissue; no tuberculosis, no actinomycosis, no neoplasm. The infiltration slowly disappeared in the course of a few months and the man was discharged cured. As I have said, I considered this a case of wooden phlegmon in the absence of other explanation."

rise to no disturbance excepting for its presence and was therefore left untreated. It slowly increased in size. At the end of three or four weeks swallowing became somewhat difficult and the movements of the neck were restricted. On account of continued growth of the swelling the patient sought admission to the hospital. At this time the anterior half of the neck presented a slightly elevated swelling with a smooth surface and sharply outlined margins. The color was uniformly purple; it was attached to the underlying tissues and to the skin. The mass could not be indented with the finger. It extended from the jaw above to the collarbones below. There was no fever. Deglutition was difficult and painful. Movements of the neck were very much limited. The urine was free. Moist, warm packs were ordered. Ten days after the admission of the patient to the hospital the respiration began to be disturbed and swallowing became still more difficult. Dyspnea was especially marked at night and became actually threatening. A few days later the skin became edematous and at the same time a more intensely purple zone formed at the center of the mass. This center slowly softened. It was incised and a very small quantity of thick, bloody pus escaped. Dysphagia and dyspnea subsided, but in general the local condition persisted. Other small foci of softening formed and were evacuated; but little pus was present. The entire condition had completely disappeared at the end of five months and the patient was discharged cured. Rare coccidium forms, isolated or in groups, were found in the scanty pus.

Capasso[38] contributes two personal observations. In one the entire back of the neck was involved, small abscesses forming here and there from time to time, complete healing taking place at the end of some three months. The other case of Capasso concerned a priest who presented a woody phlegmon of the entire left cervical region. The mass was of stony hardness. Incisions of the hard mass showed lardaceous tissue without trace of suppuration. The swelling continued to extend after the incisions were made and a second and third intervention, with deeper incisions, had but little effect. The condition went on in this way for some weeks without general symptoms and with but moderate fever. After some time compression symptoms, through disturbed innervation of the limbs, became noticeable. Incontinence of urine came on. The deep, free incisions gave rise to very scanty suppuration At the end of several weeks the patient died, without marked symptoms of a grave general infection but still presenting the same signs of woody hardness in the affected region.

Suchy[39] contributes notes on an interesting observation in which symptoms of tracheal stenosis came on very suddenly. Operation disclosed a small, circumscribed abscess close beside the right thyroid cartilage. Relief followed the evacuation of a relatively small amount of pus. Complete recovery at the end of two months.

Other isolated observations on this interesting affection are reported by a number of surgeons. The chronologically arranged bibliography† at the end of this article gives references to these.

REPORT OF CASES

Without giving more time to these citations I venture to report three personal observations, which are as follows:

CASE 1.—A man of 52, a laborer, came under my care in October, 1901, presenting a hard, fixed, bluish mass about the size of a flattened, large apple, in the median line of the neck beneath the lower jaw. According to his history he had suffered from a diffuse, tender swelling in the floor of the mouth about one month previous. This mouth swelling had twice been incised by a physician; at each time a moderate amount of pus had been liberated. The swelling beneath the jaw had come on slowly, painlessly, progressively. When seen by me it was fixed on the deep tissues; the skin was adherent and slightly edematous; it was of stony hardness and my provisional diagnosis was carcinoma. Under local anesthesia a fairly long, deep incision was made. The cut surface of the mass was hard, of a grayish white; it had the microscopic appearance of carcinoma. No pus was encountered in making this incision and there was no point of fluctuation. A good-sized piece was excised and submitted to Dr. J. A. Wilder, professor of pathology in the University of Denver, who reported it to be fibrous, inflammatory tissue. Expectant treatment was instituted, local, moist applications, general tonics. The man was depreciated in general health, depressed mentally. There was no fever at any time and he was able to be up and about. For three weeks after the patient came under observation the mass gradually increased in size, becoming something like a third larger than it was when first seen. At the end of this time small, rather superficial foci of suppuration began to appear. These were incised, and small amounts of thin pus were evacuated. Cultures showed this pus to contain *Staphylococcus albus* and *aureus*. At the end of three or four weeks the mass began to diminish in size and slowly disappeared. The man passed from observation three months after I saw him, four months after the onset of the disease. At that time there was a fair amount of thickening beneath the jaw, and movements of the jaw and neck were somewhat restricted. During the height of the swelling deglutition was somewhat interfered with but the man's breathing was at all times free.

CASE 2.—In December, 1906, Dr. Frank W. Finney, of La Junta, Colorado referred to me Mr. G., a man of 45, of Lamar, Colorado. Some two months before he was seen, the patient had suffered from an infection around the left parotid gland. This had been incised by Dr. Finney; a small amount of thin, bloody pus had been evacuated. The inflammatory condition did not subside but extended to the left side and back of the neck. This extention of the swelling had been painless and unaccompanied by fever. It had been progressive. When the man came under my observation the entire left side and back of the neck was the seat of a diffuse, hard swelling which extended from the occiput and mastoid above to a point opposite the spinous process of the fourth cervical vertebra below. This swelling extended forward toward the jaw and across the median line. It was fixed; the skin over it was attached and somewhat discolored. The mass gave me the impression of malignancy. Operation was performed under ether at the Mercy Hospital, Dec. 15, 1906. On incision the mass was hard and whitish; it looked like carcinoma. Complete removal was impossible. Excised portions were given to Dr. J. A. Wilder, who reported the condition to be inflammatory fibrosis of muscle and fasciæ. At no time while the patient was under my care was there suppuration. The man returned to his home in Southern Colorado three weeks after operation and I was told that he died in Southern California in 1909. I am unable to learn the exact cause of his death.

CASE 3.—*History.*—Mr. X., aged 47, while in New York in December, 1909, suffered from a severe attack of influenza. After three weeks of this disease a tender swelling presented in the floor of the mouth on the left side. The gums around the teeth of the left side of the lower jaw were tender, discolored and inflamed. On Jan. 3, 1910, Dr. Myles incised the tissues at the floor of the mouth and found a little pus (streptococcus and staphylococcus). During the following two days symptoms of an acute Ludwig's angina appeared; swollen mouth, salivation, fetid breath, strident voice, general difficulty in swallowing, swelling beneath the chin, swelling of the left submaxillary region. On Jan. 5, 1910, a submaxillary abscess was incised by Dr. Blake at the Presbyterian Hospital.

† For which I am indebted to Dr. F. Robbins of New York.

‡ This case is presented in full. I am much indebted to Dr. S. G. Bonney for constant, valuable aid.

A secondary abscess was found below the angle of the jaw; the swelling in floor of the mouth was drained. Under hot fomentations and mouth irrigation the swelling gradually subsided. (Dr. Blake tells me that he evacuated ½ ounce of pus containing streptococci and staphylococci.) On January 24, nineteen days after operation, Mr. X. left New York for Denver. At that time he was thought to be in excellent condition; there was a small sinus which discharged but little. There remained a hardish swelling in the left side of the floor of the mouth and one beneath the chin. During the night of the day on which he left New York he was conscious of an increasing swelling beneath the lower jaw on the left side and of an increase in the swelling beneath the chin. The patient presented himself at my office on January 26. A small, very slightly discharging, submaxillary sinus was present. There was a moderate, rounded swelling beneath the chin and a further moderate swelling beneath the left border of the lower jaw. Both of these swellings were hard; they were not tender. An elongated, hard, fixed swelling was felt in the floor of the mouth in the region of the sublingual gland. The patient was weak but he had no fever. His local condition was not thought to be of marked importance; it was thought to be an ordinary induration consequent upon a severe Ludwig's angina. During the next few days the swellings beneath the chin and the jaw rather tended to increase. They became somewhat painful. Swallowing, which had before been good, began to become impaired. The voice was at times husky. An *x*-ray picture failed to show a calculus or any affection of the bone. It was thought wise to make a free incision and remove the left submaxillary gland.

Operation.—Performed at the patient's home, Feb. 2, 1910, under ether, Drs. Childs and Jones assisting. Free incision from midline of chin beneath border of lower jaw to its angle. All tissues hard, fibrous, whitish, boardlike. All tissues fused in a mass. Removal of a large area of hardened platysma muscle and fascia. Removal, with some difficulty, of the left submaxillary gland. Further incision between the genial muscles up to the mucous membrane of the floor of the mouth. Entire digastric triangle cleared out and packed with gauze. Rubber drainage-tube to the floor of the mouth. Separate, large cigarette drain beneath the chin. Very wide, thorough operation. Subcuticular suture. Culture taken from wound negative. Culture from sinus showed *Staphylococcus albus* and *aureus*. Sections of gland and muscles made by Dr. H. S. Denison showed "dense fibrous tissue with the typical distorted nuclei of chronic inflammation. No evidence of malignancy."

Postoperative History.—Smooth immediate course. Daily dressings, gradual closure of the wound. Good healing at sutured area. Daily irrigation of wound, gradual pushing out of tube and drains.

March 6, 1910: During the past week the swelling beneath the chin has tended to increase, the skin over it has become reddish, the skin below the middle of the incision has become reddish and swollen. The swelling of the sublingual gland as felt in the floor of the mouth remains about the same. It is hard, not tender. The patient has no fever; during the past three weeks his temperature has been normal and his pulse about 80 to the minute both morning and evening. He has been up and about, out of doors, sleeping well and eating fairly, though he has had but little appetite. His bowels have been moved daily by laxatives. He opens his mouth well and has good use of his tongue; his voice and swallowing are good. Hot boric compresses are to be applied to the swollen area.

March 9: The voice is a little rough this morning. The patient complains of headache. He says that he feels "played out." There is no fever. There is a suspicion of beginning softening in the mass beneath the chin; hot fomentations continued.

March 10: The mass beneath the chin seems somewhat enlarged. It is of a bluish-red or violet color; it is hard, not tender. Under cocain an incision ¾ of an inch long and ¾ of an inch deep is made at about its middle. A very little streaky pus is liberated. The mass, at its cut surface, is whitish and seems fibrous.

March 11: The mass is about the same in size. Three cultures are taken from various places. Hot fomentations continued. The patient has no fever; he feels fairly well.

March 12: The mass seems to be larger this morning. It is of a rather deeper bluish-red color; there is no discharge from the wound made on March 10. The sublingual gland in the floor of the mouth seems to be rather larger and harder. Dr. W. C. Mitchell reports one culture tube to be sterile; each of the others shows *Staphylococcus albus* and *aureus* together with a pseudo-diphtheritic bacillus. An autogenous vaccine* is ordered.

March 13: The mass seems to me a little smaller this morning; its color is less marked. There is practically no discharge. Hot fomentations of a weak boric solution have been continued. The patient constantly shows a pulse of 80 and a normal or subnormal temperature. He sleeps well and has no pain. He can open his jaw to practically the full extent; the motions of the tongue are excellent, though the patient thinks that there is rather more fullness in the floor of the mouth. He is up and about during the day. While he has practically no appetite he takes a sufficient amount of food.

March 14: The mass beneath the chin seems a little smaller this morning, the color is less marked. There seems to be a little increase of deep thickening just below the angle of the jaw on the left side. Further incisions are delayed in the face of this apparent improvement. Considering the solidity of the tissues between the lower jaw and the hyoid bone the patient has a remarkable use of the lower jaw and of the tongue. No positive prognosis is made at this time, although the outlook for recovery is thought to be good. The condition, clinically, resembles cancer or actinomycosis.

March 17: Since the last note was made the patient has been up and about the house daily. Hot fomentations have been continued. His general health is good; he has no pain nor fever. The swelling at the left side of the floor of the mouth tends a little to recede; it seems a little smaller on palpation. There is still a small sinus at the middle of the digastric triangle. There is practically no discharge from this. There is a very slight discharge from an incision which was made a few days ago; this incision tends to heal. The mass between the lower jaw and the hyoid bone seems rather smaller and tends to become movable; it is of a bluish-violet color. The change has not been marked but it seems fairly noticeable and is a change for the better.

March 21: During the last two days the mass beneath the chin has become rather deeper red in color and somewhat more swollen. It is a little more tender. The general health is good. The hot fomentations are continued. This condition tends to recede and advance by turns, and despite the fact that I believe the general outlook good I must admit feeling a marked sense of anxiety.

March 25: The condition is better now than at any time since the patient returned to Denver. The mass below the chin is movable; the mass in the floor of the mouth is smaller and softer. The process is essentially a chronic one.

March 29: During the past three days there has been increased swelling, pain and discomfort, increased swelling and disability in the floor of the mouth. During the past twelve hours there has been a fairly free discharge of thick pus at the site of the incision last made.

April 11: Since the last note the patient has been up and about, and has had the boric acid fomentations applied whenever the skin would permit. On the days on which the wet dressings have been omitted he has been out of doors. The mass beneath the chin tends slowly to improve; at times it has scantily discharged pus.

April 15: A lymphatic gland the size of a half cherry is discovered just below the angle of the jaw on the right side. This is movable, not tender. Probably it is secondary to inflamed tissue beneath the jaw; it may be due to the vaccine. The mass beneath the jaw is more reddened and swollen at the right of the median line.

* In such a condition it is always difficult to judge accurately as to the value or effect of a vaccine. In general I must confess to skepticism regarding these agents in surgical infections, yet in this particular case I am inclined to think that the vaccine was of definite value.

April 16: Since the last note was made the entire condition has become much improved. The gland beneath the angle of the jaw is smaller; the mass beneath the chin is smaller, more movable and of a better color.

April 25: The local condition is markedly improved. The incision of April 16 healed in a few days without suppuration. (I am impressed by the fact that in this condition of woody phlegmon incisions through inflamed tissue may heal very promptly without suppuration.)

April 28: The local condition has steadily improved. The condition in the floor of the mouth is much better; the mass beneath the chin is smaller and very freely movable. The gland at the angle of the jaw is much smaller.

May 20, 1911: From the time of the previous note on, the condition slowly but steadily improved. There was no further suppuration. The hardened mass gradually disappeared. On June 1, four months after the patient came under my care, he was considered well. There was a little deep thickening of the submaxillary tissues but this was hardly noticeable. The scars beneath the jaw were so placed that they were hardly to be seen. The general health steadily improved and the patient considered himself cured. I have seen him often since; there has been no relapse.

I have cited this history at some length because it seems to me to be that of a carefully observed, typical case.

The foregoing personal cases conform closely to the type described by Reclus. In the first case the clinical course was typical and a cure resulted. The second case was a clear one but the man passed from under my observation at an early day and I am at this time uncertain regarding the exact ultimate history. I am under the impression that he died from some intercurrent disease. The third case, the history which I have related at length, is absolutely typical in every particular. I think that it may be accepted as a classical example of the affection under discussion.

I am in receipt of a letter from Professor Reclus† under date of Feb. 8, 1911, giving the present view of that distinguished Paris surgeon. He says that the condition is not considered by him a definite morbid entity, but that it is a form of anatomic reaction which can be provoked by any pathogenic germ; not only by the ordinary agents of suppuration, but also by the fungi (actinomycosis, sporotrichosis) the gregarines, etc. This anatomic reaction, characterized essentially by the production of fibrous tissue, may be found in regions other than the neck; for example, around the abdominal viscera, principally in the right iliac fossa, or around the kidney. The so-called perinephritic sclerosis is practically a ligneous phlegmon. Freidrich of Marburg writes me‡ that he believes that in these cases a wide excision of the fibrous tissue is preferable to multiple incisions. I believe this to be correct in certain cases; the third observation in my own series seems to be a very good example of this.

CONCLUSIONS

1. Woody phlegmon of the neck, *phlegmon ligneux*, is a condition of infrequent occurrence. It is generally seen in men depreciated in general health and over 45 years of age. The patients are generally free from intercurrent disease.

2. The exact causation is unknown. There is generally an antecedent infection of the tissues of the mouth or the pharynx or the salivary glands. The theory of Reclus that it is a form of anatomic reaction of the tissues to the presence of pathogenic organisms or fungi may at this time be accepted in place of a more definite explanation. The causative microorganisms are apt to be of low vitality.

3. The condition is essentially a chronic one. It generally simulates carcinoma or sarcoma or actinomycosis and must be carefully differentiated. Correct diagnosis is of the greatest importance.

4. The general tendency of the disease is toward recovery. Fatalities may occur through edema of the larynx or through pressure or through diffuse extension and exhaustion.

5. Foci of suppuration should be induced in all possible ways. Warm, moist compresses are undoubtedly of value. Free incisions may be made. Excision of wide areas of boardlike tissue should be practiced in suitable cases. The general health should be brought up to the highest possible point.

6. A careful microscopic and bacteriologic study of each case is necessary. Autogenous vaccines may prove to be of value.

7. The surgeon should be in readiness at all times to perform a required intubation of the larynx or a tracheotomy.

8. While the accompanying communication concerns woody phlegmon of the neck it is to be remembered that a similar pathologic process may affect other portions of the body.

Fourteenth and Stout Streets.

† Through Dr. Kendiddy, his chief of clinic.
‡ Personal letter, April, 1911

BIBLIOGRAPHY

1. Reclus: Des phlegmons ligneux de la région cervicale, Gaz. d. Hôp., No. 88, 1893, p. 833; Rev. de chir., 1896, p. 522; Chron. chir. de la Pitié, 1896, p. 140.
2. Batière: Phlegmon chronique de Reclus, Thèse de Paris, 1895.
3. Kocher and Tavel: Vorlesungen über chirurgische Infektionskrankheiten, Part I, 1895, p. 189.
4. Sobolenski: Case of Woody Phlegmon of the Neck (Russian), Protok. Kavkaszk. Med. Obstr., 1895.
5. Le Dentu and Delbet: Traité de chirurgie, 1898, vi, 715.
6. Kusnetzoff: Ueber die Holzphlegmonen des Halses (Reclus). Arch. f. klin. Chir., 1899, No. 3, p. 455.
7. Van Stokum: Treizième Congrès français de chirurgie, 1899.
8. Krause: Ueber holzharte Entzündung des Bindegewebes, Centralbl. f. Chir., 1899, No. 17.
9. Muhsam: Ueber Holzphlegmone, Deutsch. med. Wchnschr., 1901, No. 5.
10. Martygnow: Woody Phlegmons (Reclus), Khirurgia (Russian), 1901, ix, No. 54.
11. Janson, K.: Traeflegmone, Hygeia, 1902, vi, 698.
12. Remedi: Contributo alle lesione prodotte dal fungo raggiato, Sperimentale, 1903.
13. Saussié: Contribution à l'étude des phlegmons de la paroi abdominale, Thèse de Paris, 1903.
14. Marion: Le phlegmon ligneux du cou, Arch. gén. de méd., 1903, i, 217.
15. Kantorowich: Woody Phlegmon of the Neck (Russian), Prakt. Vrach, 1903, p. 399.
16. Kourjoumdjiam: Jour. d. prat., April 18, 1903; Il Policlinico, Sez. prat., 1903, No. 37.
17. Merkel: Zur Kenntniss der sogenannten Holzphlegmone (Reclus), Centralbl. f. Chir., 1904, No. 48.
18. Lang: Ein weiterer Fall von sogenannter Holzphlegmone, Dissertation, Würzburg, 1904.
19. Prax: Deux cas de phlegmon ligneux, Toulouse Méd., 1904, p. 295.
20. Moreau: Contribution à l'étude de l'oedème dur traumatique, Bull. de l'Acad. r. de méd. de Belgique, series 4, 1904, xviii, 786.
21. Betagh: Due casi di flemmone ligneo tardivo a lento decorso, in operati di ernlotomia radicale alla Bassini e guariti di prima intenzione, Policlinico, Sez. prat., 1904, No. 32.
22. Sick: Die Holzphlegmone, Deutsch. Ztschr. f. Chir., 1905, lxxvii.
23. Pankstat: Beitrag zur Lehre der holzharten Entzündung des Bindegewebes (Holzphlegmone), Deutsch. Militärärztl. Ztschr., 1905, p. 516.
24. Betscher: Zur Geschichte eines Falles von Holzphlegmone, Ztschr. f. Fleisch- u. Milchhyg., 1905, p. 209.
25. Schmincke: Zur Frage der Holzphlegmone (phlegmon ligneux du cou, Reclus), Centralbl. f. Chir., 1905, No. 1.
26. Fichtner: Ueber leichte Formen von Holzphlegmonen, München. med. Wchnschr., 1905, No. 35.
27. Lejars: Le phlegmon ligneux, Semaine méd., 1905, No. 5.
28. Parmentier: Le phlegmon ligneux, Prog. méd. Belge, 1905, No. 17.
29. Giuliano: Contributo al flemmone ligneo postoperativo, Gazz. d. osp., 1905, p. 131.
30. Suchy: Ueber einen eigenartig verlaufenden Fall von Halsphlegmone (Holzphlegmone?) Wien. med. Wchnschr., 1906, No. 34.
31. Boenninghausen: Ein Fall von Holzphlegmone, Deutsch. med. Wchnschr., 1906, No. 9, p. 350.
32. Sotis: Contributo al flemmone ligneo, Riv. med., 1908, ii; Morgagni, 1908, No. 17.
33. Nazari: Cancro e flemmone ligneo, Bull. d. roy. Accad. med. di Roma, 1907, xxxiii.

34. Braat: Zoegenaamd phlegmon ligneux met Keelcomplicaties, Nederl. Tijdschr. v. Geneesk., 1908, p. 492.
35. Lexer and Bevan: General Surgery, New York, 1908, D. Appleton, p. 277.
36. Keen: Surgery, 1909, iii, 297.
37. de Cortes, Antonio: Sul flemmone ligneo di Reclus, Boll. d. clin., Milano, 1909, xxvi.
38. Capasso, F.: Il flemmone ligneo, Riforma med., 1909, No. 26.
39. Cassanello: Flemmone ligneo prevesicale, Gazz. d. osp. e d. clin., 1909, xxx, No. 29.
40. Da Costa: Modern Surgery, 1910, p. 141.

ABSTRACT OF DISCUSSION

DR. FRANK LE MOYNE HUPP, Wheeling, W. Va.: One of the important points mentioned by Dr. Powers and emphasized also by Kocher, is that the characteristic point of this disease does not lie in the etiology so much as in the diminished potency or attenuated virulency of the torpid and non-reactive microbes, and the boardlike and densely hard infiltration of the skin, which though localized at first, may extend from the jaw to the clavicle. While Dr. Powers has told us that in arriving at a diagnosis, carcinoma, sarcoma and actinomycosis are to be excluded, this strange disease is also not to be confounded with Ludwig's angina, where we have to deal with an acute inflammatory process whose most striking characteristic is edema of the glottis with a phlegmonous, erysipelatous, perilaryngeal infection dependent on other causes. As a matter of fact, the Canadian teacher, Archibold, has said that the disease described by Ludwig in 1838 occupied the submaxillary space, was acute in its course and usually secondary to an adenitis, the exciting lesions being a carious tooth, a mucous ulcer or a tonsillitis. The deep fascia furnishes an unyielding barrier for the deep-seated exudate, and so the larynx and glottis are subjected to a pressure and inflammation, presenting the characteristic picture of a true Ludwig's angina, with pressure symptoms, infection, and often death. This suggests another point in woody phlegmon, and that is while it may be true in some cases, as Andrews has described, that in its course no alarming symptoms of dyspnea or dysphagia develop, the essayist has told us that a suffocating laryngeal asphyxia has resulted, due to edema of the glottis, demanding a tracheotomy, and that we should always be prepared for this emergency.

Two cases of this kind have come under my attention: one, I think, was a typical woody phlegmon which was tracheotomized in the second month of the disease, and the other an extensive infiltration of the planes of the entire anterior aspect of the neck due to a virulent infection following tracheotomy for post-typhoid laryngeal stenosis. In both cases a quick tracheotomy was successfully done, using a new retractor or tube pilot which I have devised for the emergency operation.

BRAIN TUMOR*

REPORT OF NINE CASES

SHERMAN VOORHEES, M.D.
ELMIRA, N. Y.

The following cases of brain tumor seem to me to present variety enough in their symptom-complex to warrant reporting, and to serve also as a basis to direct attention to some of the clinical manifestations present. It has been my experience that some cases of brain tumor are overlooked, especially when no fundus changes have taken place, and that we should not depend too much on choked disk in order to say whether or not we have to deal with a cerebral neoplasm. Especially I think that this is so with many of us who are located in the smaller cities, where we have no expert neurologist to work out with us these central problems. Those of us so situated must depend largely on our own findings for our diagnosis. These cases are much more difficult when they present but few, if any, localizing symptoms outside of the eye changes, and also when the nerve change is in its first or second stage; or perhaps when it never passes on to swelling enough so that it would be classified as choked disk. I am fully convinced that some cases of brain tumor are missed in diagnosis because of the non-recognition of this eye change in its early stages; and sometimes because coincident with the beginning choked disk there appears a macular change; and perhaps some albumin in the urine, with or without the presence of casts, or other evidences of nephritis, and the conclusion is rapidly reached that the case is one of albuminuric retinitis. While the macular figure in brain tumor is not like that of typical albuminuric retinitis, still it is sometimes confused with it; but as albuminuric retinitis is usually a late symptom in nephritis, and the macular change in brain tumor comes usually with the height of the swelling, there should be no difficulty in differentiation.

Both nephritis and brain tumor, however, occasionally occur simultaneously, and it is well to bear this in mind; but when there are other symptoms of tumor together with the eye changes it simplifies the diagnosis.

With Dr. de Schweinitz and others, I think that the symptom of temporary amaurosis is of great value, and occurs in the majority of cases. I wish also to emphasize Dr. de Schweinitz' advice to deduct the amount of static refraction present before giving the amount of swelling of the disk.

I believe also that in a majority of the cases the greatest swelling occurs on the side of the lesion, but the exception to this occurs so frequently that as a sign it cannot be depended on in localization. Taken in conjunction with other symptoms, however, it is of value. The same, I think, may be said of nystagmus. While this may be exaggerated when the eyes are turned to the side of the lesion, still it so frequently happens that the contrary is true that it is not of such value as we formerly thought; and, further, nystagmus is far from a constant symptom in brain tumor, and hence loses much of its importance as a diagnostic symptom.

A symptom which I believe is of great value is deafness in one ear, either partial or complete; in the majority of cases of tumor of the cerebellum and angle this appears at an early date. In some of my cases it was among the earliest of symptoms, and is an important factor in localizing the side of the lesion. In the cases here reported four of the patients had deafness on the side of the lesion, as confirmed by operation or autopsy.

The character of the vomiting is usually expulsive; it comes on without any previous nausea, and often is nocturnal. I believe that ophthalmologists should be as familiar with the symptomatology of brain tumor as the internist or surgeon; as ordinarily no one symptom can be relied on in making a diagnosis, and not infrequently the patient consults the ophthalmologist first for temporary amaurosis, or the failure of vision resulting from optic nerve changes. It is interesting to note what a loss of vision occurs in cases which are not yet in the choked disk stage, and in which only a papillitis exists; and to note also the amount of swelling which may exist in a nerve-head with good central vision.

I believe, with others who have written on this subject, that even if we find a case late in the disease, in which atrophy has already begun, we should not hesitate to recommend operation by decompression and removal of the mass if possible. In this way we are likely to save what vision remains, even if that be but light perception. Another point in this connection is that while saving the

* Read in the Section on Ophthalmology of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

remaining vision, operation also serves to lessen the amount of staggering and vertigo, and makes it possible for the patient to get about readily, as Case 3, here reported, shows. In many cases also it serves to relieve nausea, loss of taste and smell, and other symptoms. So sure am I that such advice is for the best interest of the patient that in such cases I always recommend consulting a cranial surgeon. I have seen patients who were blind, deaf in one ear, unable to walk or stand, or to talk so that they could be understood, or to swallow without serious choking, and who suffered severe pain and a constant nausea and inability to retain food, with other of the terminal symptoms that tend to make a patient so absolutely helpless and wretched that nothing could be worse. To the laity, however, a cranial operation is a terrifying thing, and several of my patients refused operation and underwent all these things because they or their families were not educated up to the point where they could conceive of a surgeon doing an operation on the brain and the patient surviving.

I have no doubt that the reversal and interlacing of the color lines as described by Drs. Cushing and Bordley as an early diagnostic sign is of value. I have two cases at present in which these phenomenon occur. If it is found to be constant prior to the visible nerve changes it will be of great service in diagnosis.

In my cases I have not noticed the distention and change in color, and uneven tortuosity of the retinal veins prior to visible nerve changes.

I believe thoroughly in early operation in choked disk, and believe also that if there is doubt as to whether or not the lesion is of luetic origin the Wassermann test should be used. While this reaction is not always to be depended on, still it is the best means of diagnosis in questionable cases. If there is a definite history of specific infection, especially if comparatively recent, and in the presence of brain symptoms, then I believe a course of mercury should be tried. It is little short of criminal to waste time in every tumor case by such treatment, especially when there is great swelling of the disk and perhaps beginning atrophy. In an old syphilitic case, however, I think the advice of Horsley, to treat it like any other surgical case, is correct. The cases in which operation has seemed to increase the papilledema seem to me too few to weigh much against operative procedure at as early a date as possible; yet, it is wise to inform the patient or friends of possibility of danger.

A symptom, which several of my patients exhibited, I have not noticed reported by others, especially in tumors of the cerebellum and angle; that is, a loss of sense of distance and direction for objects. For instance, in Case 1, the patient said that she missed articles she attempted to reach; either she did not reach far enough, or went to one side, or overreached; and perhaps she would fall over the object. In walking to a door she was likely to miss the opening and strike the casing; and this was not due to staggering, but to a loss of ability to judge the distance and direction of the object.

In Case 3, the patient had noticed the same thing, and stated that she had this trouble, especially in getting into a wagon, and attempting to take hold of the dashboard to aid in getting in; she said that she was likely to miss it and fall, and, in fact had fallen several times.

Another of my patients said that he was likely to stumble over objects that were low, but if the object were sufficiently high he had no trouble in getting over other than staggering; he constantly misjudged the height of objects on the floor, or on the sidewalk, and was likely to stumble over them. This is perhaps but a part of the general ataxic muscular condition.

In two of my patients an early sensory symptom noticed was a feeling of numbness about the eyes and across the face, as if the part were "asleep," and the patient had a desire to rub it.

That brain tumor with rapid degeneration can sometimes simulate brain abscess is, I think, well illustrated in Case 5, as there was the rapid onset, the slow pulse and the subnormal temperature seen in some cases of abscess. I think that in any case in which there are not decided blood-changes and in which no focus of suppuration can be found in any part of the body from which there might be metastasis that we are warranted in excluding brain abscess.

It seems to me that in the last case reported Jacksonian epilepsy is unusual in tumor of the left hemisphere of the cerebellum.

Perhaps my report of these cases, as well as these remarks, is too general in character for the Section on Ophthalmology; but it is my contention that we should embrace in our examination, especially in the absence of a neurologist, a general examination; I have not tried to give here the results of such examination entirely, but only the more prominent general symptoms.

CASE 1.—*Patient.*—R. B., girl, aged 22, teacher, was referred to me by Dr. Colegrove in September, 1897. She looked well, except that she was somewhat anemic, but told me that for a year past she had been in poor health. She had been treated for indigestion, and had also some pelvic trouble. Recently her eyes had not felt right; they smarted and vision blurred, especially in the right eye. At times there was temporary loss of sight in both eyes, lasting from a few seconds to ten minutes, during which time she was very dizzy, and the blindness was seemingly equal in both eyes.

Examination.—Vision in the right eye was 20/50, in the left, 20/30. The right disk was best seen with plus 3. There was 1 D. hyperopia, and left papilledema of plus 1. There was a macular change in the right eye, with some chorioiditis, and small hemorrhages throughout the right retina. There was some loss of station, and the patient staggered in walking, chiefly to the right side. She said that she was always running into articles of furniture about the room; frequently made a misstep in descending stairs; that she misjudged distances, and in reaching for an article overreached it, and was likely to fall. Patellar reflexes were lost. Pupils contracted to light and convergence; there was no paralysis of extrinsic muscles, and no nystagmus. The patient had had very severe headaches with severe vomiting, which nothing would control. She said she had taken on some weight within the last few months, but that it did not seem natural to her, and she could not account for it.

Progress of Case.—Three weeks later, the right disk had 6 D. of swelling, and the left 1 D. There was much loss of coordination; and more hemorrhages in the right retina. The arteries were small, and the veins dark, large and tortuous; the left retina had a slight macular change. Vision at this time was, right 20/50, and left 20/30.

The patient was put on iodid and mercury, although there was no luetic history.

November 20: The patient said that the vomiting was better, the attack being less frequent and not so severe, but that she still had the blind spells, and that she did not walk any better. She had noticed also that there was loss of taste, and that things did not appear natural to her when eating. There was also some loss of smell; she said that she could not detect the odor of flowers. She appeared weak and anxious. I informed the family of the gravity of the case, and asked them to consult a cranial surgeon; but at this time we did not have as much to offer in this class of surgical cases, consequently I did not urge the matter.

About two months later I saw this patient again. There was 5 D. of swelling in the right eye, and 1 D. in the left,

with beginning atrophy to the temporal side of both disks, and the swelling subsiding. There was very severe vomiting at times, her other symptoms were exaggerated, and she had begun to lose flesh.

Termination of Case.—I did not see the patient again, but learned from her physician that total blindness ensued; there was almost constant vomiting, inability to walk or stand, and death took place in April. An autopsy was refused.

CASE 2.—*Patient.*—H. S., aged 18, farmer. Family history was good. I saw him in December, 1903. About six months previously he had begun to have severe pains at the vertex of the skull, and became very dizzy, staggering when he walked. He often had attacks of vomiting without preceding nausea. He was dull mentally, and was very slow in his answers; said he was unable to think clearly, and that his memory was poor. Recently his eyes had blurred, and there was a temporary loss of sight in both eyes, varying in time from a few seconds to several minutes.

Examination.—The patient was brought to me with a diagnosis of locomotor ataxia. He was very ataxic, chiefly to the right side; there was swaying, chiefly to the right, on standing with his eyes closed and feet approximate. The patellar reflexes were lost. Pupils reacted to light and convergence; there was no paralysis of extrinsic muscles. Vision, right 20/40, left 20/200. The right fundus showed choked disk, best seen with plus 6; left, plus 4. There was no nystagmus, and eye movements were carried out normally; there were no hemorrhages in either retina. On a rough test, both fields were contracted, but color fields were not taken. Some albumin was found in the urine, and some casts, chiefly of the hyaline variety. The patient had become very fleshy in the past few months; the skin seemed tense and hard, as if fully distended; did not pit on pressure, and had a leathery feeling. There was no deafness in either ear, and there was no loss of taste or smell.

Course of Disease.—I saw this patient but once, and on telling the family the nature of the disease other physicians were consulted, who, after examination, concluded that it was a case of myxedema, owing to the rapid taking on of fat, the condition of the skin, the albumin present, and the eye-ground condition. These physicians informed me that the man seemed to improve on thyroid extract. He then consulted Dr. Allen Starr, of New York, who diagnosed the case as one of brain tumor. His condition gradually grew worse; his vision failed utterly; moving about, walking or standing without support was impossible; vomiting and headache became very severe, and the patient died suddenly, about six months after I first saw him.

Necropsy.—The brain and kidneys were sent to me for examination. They were hardened in formaldehyd solution: The kidneys showed some cortical nephritis. The cerebrum was normal throughout, except that on opening the lateral ventricles there was a thick fluid, slightly tinged with blood in both lateral ventricles. This was spread out on the floor of the ventricles. On section of the cerebellum the right hemisphere was seen to be the site of a large tumor, which occupied the entire side and extended to the left hemisphere but did not involve all of that side. The mass was well broken down at the center, and over the fourth ventricle, and the fluid spoken of as being in the lateral ventricle was in the fourth also, and evidently came from this softened vascular tissue. Examination showed the tumor to be sarcoma.

CASE 3.—*Patient.*—C. F., female, aged 32, a clerk, was first seen in December, 1904. Two years before, she began to have a queer sense as of drawing or numbness across the face, below the eyes, and about the eyebrows. She said that the stiffness annoyed her greatly; she wanted to rub her face to make it feel alive; she also noted at this time that vision blurred greatly. She was examined by an ophthalmologist, whose notes show no disease of the eyes; no macular change; and no refractive trouble requiring glasses. There was, however, 3 degrees exophoria. The numbness persisted, however, and she noticed that she stumbled over objects, and had dizzy spells. She was more apt to stumble over an object if it were low than if it were standing at an ordinary height. She said that she also seemed unable to avoid articles of furniture about the room, or at the store where she worked. If she put her hand out at times to touch an object she was likely to miss it, or to place her hand beyond it and run against it or fall over it. She noticed also that sometimes she made a misstep, and had noticed for months that in approaching customers in attempting to stop she frequently bumped against them, and several times had pitched forward, falling in several instances against the person she was approaching.

She again consulted an ophthalmologist about a year after the first one. This physician made a diagnosis of albuminuric retinitis, as there was some neuritis and macular change. At times also there was a small quantity of albumin in the urine, but no casts. This neuritis and macular change was no doubt the beginning of the papilledema. For some time also, even before consulting an ophthalmologist, she had what she termed "bilious spells"; she would waken suddenly in the night with severe vomiting, expulsive in character, and which nothing would control. She had temporary loss of vision, sometimes lasting for a minute or two, sometimes very transient. She told me she had noticed that for at least two years, in getting into a wagon, she would reach for the dashboard to support herself and would miss it, and had fallen in doing so several times and had become afraid to make the attempt, either to get out of or into a wagon without help, and that her legs seemed weak. Her mother had noticed also that she staggered in walking; that she was continually bumping into things about the house, and had fallen over a chair several times. Vision had rapidly failed, and her vomiting attacks grew so frequent and she staggered so badly that she gave up her position and remained at home. Her ophthalmologist said that nothing could be done for her; that the kidney disease had made her lose her sight.

Examination.—When I saw her there was no vision in either eye, nor had there been for six weeks, when she said the last light perception failed. The pupils were widely dilated with no reaction to light; the right cornea was anesthetic, the left partly so. There was marked exophthalmos of both eyes. There was still some evidence of papilledema; both nerve-heads were atrophic. I was unable to decide in which eye there had been the first or greater edema, as both nerve-heads seemed equally atrophic. In both retinas there were remains of numerous hemorrhages, which were nearly absorbed. I could not make out any macular change. The veins were large, dark and tortuous, and the arteries small, with deposit along their sides near the disk. There was marked nystagmus of both eyes, much exaggerated on extreme rotation to the right; the left eye turned to the outer side a little. There was very little headache, but what she did have was occipital. The patient had difficulty in speaking; there was no paralysis of the vocal cords, and the tongue protruded straight, but the left masseter was weak. There was total loss of taste and smell, and there was partial deafness in left ear, both for air and bone conduction. There was a small amount of albumin in the urine, but no casts. Patellar reflexes were lost; the patient was unable to stand with feet approximate, but could do so with feet apart, though with great swaying; she staggered badly on attempting to walk, chiefly to left side. In fact, she would fall after she had taken a few steps unless supported.

Course of Disease.—A Christian Science healer stepped in at this juncture of the case, and after receiving glittering promise of cure the easily deluded family asked me to step out, and let her try. After several weeks, and after the healer had assimilated the family's store of funds, which were very limited, I was again called in; but did not claim ability to cure, as did the healer. I advised operation, but it was refused, as I could not, of course, promise return of vision. The girl finally lost all ability to stand, was absolutely deaf in the left ear; had great difficulty in swallowing anything, but could swallow semi-fluid better than fluid. She was unable to converse so that any one could understand her but her mother. There was a constant flow of saliva, and the left corner of the mouth drooped. The patellar and plantar reflexes were abolished. The optic nerves were completely atrophied, and no light sense remained. The patient continued for some months in this condition and finally died suddenly.

Necropsy.—There was no change in the cerebrum or ventricles, but there was a large pear-shaped tumor in the left

cerebellopontile angle, which had attacked the eighth nerve, and this nerve was embedded in its substance. The growth was also adherent to the periosteum of the petrous portion of the temporal bone. The pathologist's report follows:

"Specimen consists of the tumor of the brain measuring 4 cm. in its greatest diameter. The tumor mass seems to be well encapsulated and to have grown equally in all directions. The cut surface presents a mottled, dirty gray, reddish and whitish coloration, the red areas being due to numerous blood-vessels distended with blood. The white, apparently fibrous tissue strands, have a more or less radiating distribution. The consistency is variable in different areas, being greater in the dense, white connective tissue strands.

"Microscopic examination reveals an arrangement of the cells, diagnostic of fibrous sarcoma. The sarcomatous elements do not predominate, and the tumor histologically seems not to be very malignant, but the size of the nuclei is irregular. The peculiar arrangement of the cells and of the blood-vessel formation, positively indicates a malignant condition of the fibrous tumor. The adjacent brain tissue, beyond some softening, shows no important changes."

CASE 4.—*Patient.*—E. D., female, aged 24, a domestic, was first seen in January, 1906. She had been told, from an examination of her eyes and the presence of albumin in the urine, that she had Bright's disease. About two years ago she noticed that her legs were weak; she staggered in walking, but did not fall. For a year past she had thought her eyes were not right; she could not see clearly, and frequently everything before her eyes would disappear; she could not see for a few seconds, then things became clear. She began to have nausea and vomiting, and about this time noticed that she was growing deaf in the right ear. For three months before I saw her she had severe headache.

Examination.—She was blind in each eye, but light perception was present. The ocular movements were carried out in a jerky manner, and I thought that I could detect nystagmus at times, although this was transitory, and not exaggerated, in either direction. Pupils were dilated; the right pupil responded when light was thrown in from the temporal side, in which position it was recognized. The left pupil did not respond to light. There was choked disk in each eye and also advanced atrophy in each disk; there was 6 diopters swelling right and 7 left. There was no paralysis of the ocular muscles. In the right ear there was hearing only for the Galton whistle; bone conduction was nearly lost. In the left ear hearing was not impaired. It was impossible for the patient to walk or stand without being supported; she complained of a queer feeling as of numbness in the right side of the face. The tongue was protruded straight; and the right eye-ball seemed a trifle more prominent than the left. The patellar reflexes were a little exaggerated, but no Babinski sign could be elicited.

Operation.—I told both the patient and her family of her condition, and referred her to Dr. Charles H. Frazier, of the University of Pennsylvania Hospital, who, in conjunction with Dr. de Schweinitz and Dr. Spiller, examined her, and concluded that an operation was necessary. On February 23, Dr. Frazier removed the bone overlying the right cerebellar hemisphere. Following the operation, and before the next one was done, the choked disk subsided from 7 to 3 diopters; but of course there was no return of vision. The hearing improved, and the nausea and vomiting ceased; headache disappeared, and there was improvement in ability to walk, so she could get about the ward with very little assistance.

Subsequent History.—On April 7, owing to the fact that headache and vomiting had recurred, it was decided to make an attempt to remove the tumor which was supposed to exist. On opening the dura, the cerebellar hemisphere was found to be under considerable tension; it was almost impossible to expose the cerebellopontile angle, but on introduction of the finger a tumor about the size of a hen's egg, firmly adherent in the angle between the pons and the cerebellum, was discovered. The tumor was removed almost intact, and proved to be fibrous.

For the first few days after the operation, while the patient suffered considerably from shock, yet her condition was not such as to cause any apprehension. However, about the sixth day after the second operation, the circulatory and respiratory apparatus began to fail, and the patient died[1] April 15.

CASE 5.—*Patient.*—J. L., aged 25, female, consulted me on Aug. 31, 1906. She came to me because of severe headache, and said that at times she had loss of vision, lasting from an instant to several minutes. She also said that at times she had some nausea. She said for at least six years she had been a sufferer from headaches, the attacks varying greatly in intensity, but for the last six months they had been much more severe than ever before. Her sister, who was with her, did most of the talking; and until I requested her to let the patient answer my questions the patient herself had volunteered little information.

Examination.—Vision in each eye was 20/15; under a mydriatic it was the same. The patient was very slow to answer questions; and it seemed to be a long time before she comprehended the meaning of my questions. She was apathetic, seemed confused in manner, and said also that she had been depressed recently. The right disk had beginning neuritis and swelling, chiefly under the superior and inferior retinal vessels as they emerged from the nerve-head. This swelling amounted to 3 D. in the right eye. It shaded off rather abruptly, and the rest of the disk margin on both sides could be plainly seen, although there was some redness all over the disk. The same change existed in the left eye, where the swelling was at the superior and inferior disk margin; the vessels overlay the edema. The swelling was measured with plus 2. The disk margins were plainly seen, both to temporal and nasal side, except where the swelling had taken place, as stated. In the left eye, there was a very little transudation to the outer side of the disk, where a vein crossed an artery. There was not much, if any, change in the size or color of the vessels. I could not make out that there was evidence of venous obstruction. The field, roughly taken, seemed but little contracted, if at all. I did not try the color field. The patellar reflexes were normal. There was no nystagmus, or paralysis of the eye muscles. Plantar reflexes were lost, but station was good. Ear tests were negative, and the finger and nose test was also negative. The grasp of the two hands was equal.

Course of Disease.—The next day I saw the patient again, and her condition was the same. I asked her to report again in two days, but she did not do so. However, one week from the day I first saw her I was called to her home. I found her in bed, and only semi-conscious. Both pupils were widely dilated, and did not react to light. Both disks were choked, and each had 7 D. of swelling. There were large hemorrhages in both retinas, and drooping of the right eyelid. Pulse was 50, temperature 98, and respiration 14. The patient did not give evidence of much suffering. She could swallow readily, but I could not get from her intelligent answers.

Three days later, complete ophthalmoplegia took place in the right eye, and paralysis of external and internal rectus of left eye, but the patient could move the left eye up and down a little. Both eye-balls were somewhat prominent. Pulse was 45, temperature 97, and respiration 16. The disks measured about the same in swelling; both pupils were widely dilated, and did not react to light. The patient's answers were very confused as to what she could see. She said at one time that she could count fingers, and again that she could not. She did not seem to notice the bright light from the ophthalmoscope when her eyes were under examination. Patellar reflexes were lost, and no Babinski sign was present. There was no motor paralysis, except of eyes as stated. From the very rapid onset I thought that there must be a focus of pus some place in the body, and again looked over the ears for any source of pus there, but they were normal throughout; still I thought that there must be a brain abscess, because of the slow pulse and subnormal temperature. There was no leukocytosis, and the hemoglobin was nearly normal in amount.

About one week after I first saw the patient in bed she had several convulsions. They usually began in the left arm and were Jacksonian in type, and did not seem to be brought on by change in position. After having had several of these con-

1. A more complete general report by Dr. Frazier of this case can be found in THE JOURNAL A. M. A., Sept. 22, 1906, p. 923.

vulsions she seemed to brighten up, and could speak much more clearly, yet remained in a very confused condition. In the absence of her nurse, she got out of bed and walked about the room, but her vision was very much reduced, although she asserted that she could see better with the left eye than with the right. There was no sensory disturbance about the face, nor was there loss of special senses. The pulse remained very slow and full; respirations were slow, and temperature remained subnormal. I strongly advised operation, as I thought that there must be great increase of intracranial pressure; and, in the absence of a cranial surgeon and expert neurologist I advised making a right temporal decompression, which was refused. The patient again grew worse, and died four weeks from the time I first saw her.

Necropsy.—The left temporal lobe was found to be the site of a large softened tumor occupying the upper and posterior part of the lobe. It was very soft and vascular, but there were no free hemorrhages in its substance. The rest of the brain was normal, and there was no pathologic fluid in the lateral ventricles. The mass proved to be a sarcoma.

CASE 6.—*Patient.*—M. J., female, aged 51, had always been healthy until about two years ago, when she suffered an attack of influenza, which left her weak. After getting up, she noticed that she was dizzy at times and occasionally vomited. She grew so dizzy after some weeks, and staggered so much in walking, that she used a cane, and had been walking with a cane for over a year. On one occasion she fell during a period of dizziness, and the local physician said that she had fractured two ribs.

Examination.—I saw her Oct. 1, 1906. She complained of severe headache, chiefly in the frontal region. She said that she had blind "spells"; and that she was losing her hearing in the left ear; and had very troublesome noises in that ear. Her right ear was normal; with the left ear she thought she could hear a watch when pressed close, but there was no bone conduction. Her vision was, right 20/20, and left 20/20. The pupils reacted to light and convergence; both disks were choked. No hemorrhages could be seen in either eye. The right disk was best seen with plus 6, left with plus 7, but there was 3 D. of hyperopia in each eye. The patient was ataxic, pitching chiefly to the left side, and was apt to strike against the side of the door in passing through. She swayed badly with the eyes closed, chiefly to the left side. The right patellar reflex was retarded; the left was lost. There was some impairment of smell and taste. The Babinski sign was not present. The patient had consulted several ophthalmologists, and had been told she had spinal trouble. One ophthalmologist told her she probably had basilar meningitis. On examination, the urine was found normal.

Operation.—I referred the patient to Dr. Charles H. Frazier, who did a decompressive operation in the left occipital region on October 15. A cyst was found underneath the left cerebellar hemisphere and was evacuated. On retracting the cerebellum, a tumor was found in the left cerebellopontile angle; it was very adherent to the surrounding structures, but was not removed. A small section was taken, however, and examination showed it to be a fibrosarcoma. Following the operation, the patient did nicely, but about two weeks later began to have severe nausea, vomiting, and considerable pain. A second operation was done, and the intracranial pressure was found to be considerable; the dura was slit freely, and the wound closed. For some days the vomiting seemed to be increased. She was very ataxic. She also developed some rise of temperature, which ranged from 99 to 102 F. This soon cleared up, but the vomiting persisted.

Subsequent History.—When the patient was sent back to me on January 7, the right disk measured 2 D., and her left 1 D. She said that she still had periods of vomiting, and staggered in walking; and had some difficulty in swallowing. Vision was better, and her sense of taste and smell had partly returned.

July, 1907: She had but 1 D. of swelling of the disk in the right eye, with vision of 20/20; and congestion only of the disk in the left eye, with vision of 20/15. With her reading glasses she reads J 2. I thought I could detect some beginning atrophy. She still walked with a cane, and said that she did not remember well.

June 16, 1908: The swelling of both disks had disappeared, but there was evidence of former choking, and some deposit along the vessels near the disk, although the vessels were not altered in size. The patient could hear a 512 C fork in left ear for twenty seconds, but had no hearing for watch on contact. She complained of some numbness in her left hand and arm; and that she frequently choked in swallowing liquids.

Feb. 26, 1911: The last time I saw the patient, there was no swelling of either disk, but still some redness, and showed deposit of fibrous tissue about vessels. With her distance correction she sees 20/15 in each eye. She has a little bone conduction in the left ear, but there was no hearing for watch. She has been going about her duties since I last saw her; she works about her farm, but says that she has noticed that frequently she drops things from the left hand, and that her gait has been very unsteady for the last year, and she feels much more confidence in herself if she carries a cane. There is a large hernia cerebri about the size of a small hen's egg at the site of the operation. She says that at times this is much harder, as she expresses it; and that at those times she notices she is apt to be less steady while walking. She still has some trouble about eating; says that liquids no longer choke her, but that solids frequently do. She suffers no pain; is satisfied now that she will keep her vision; is cheerful, and regrets that she did not have her operation earlier.

CASE 7.—*Patient.*—J. D. M., male, aged 23, machinist, consulted me March 25, 1908, for severe headaches, which he stated he had had since boyhood. Recently they have been much more severe; and about three weeks before consulting me he began to have attacks of vomiting. The vomitus, he stated, was bilious. He has not been free from headaches for three weeks, and the pain is referred to brow and occiput. Just before these severe headaches came on he had noticed dimness of vision at times, and occasionally diplopia. The latter was not constant, however, and was more apt to come on when he was tired. There was no nausea preceding the vomiting. He has vertigo, which began about six weeks before I saw him, and he has had dizzy spells daily since. On two occasions he had fallen, when these dizzy spells began, once on the street. After this attack he seemed confused mentally and did not appear well. With the vertigo he says he feels a peculiar sensation in his left hand and arm, like the arm being "sleepy." Patient had not been working for the past six weeks. He seemed slow of comprehension in answering questions.

Examination.—Vision in right eye was 20/15. Patellar reflexes were normal. The patient had a homonymous diplopia. The right disk had 3 D. of swelling, and the left 2 D. The right ear was normal for watch and bone conduction; in the left ear watch could be heard but 10 inches, and whisper 5 feet. I told him of the nature of his trouble. He had denied any history of lues; and on close questioning there seemed to be no specific family history.

Consultation.—I referred him to Dr. Frazier, of Philadelphia, who, in conjunction with Dr. Spiller and Dr. de Schweinitz, examined him. Their opinion was that he probably had a brain tumor, but that an operation was not imperative at that time. It was also suggested that he might with safety wait a little time while a course of mercury and iodid was tried, which was done.

Course of Disease.—The patient soon began to improve; his vertigo and vomiting subsided, the neuritis rapidly lessened; and on examination in the following June he had but 2 D. of swelling in the right eye and 1 D. in the left, chiefly to the upper side of each disk. He complained of some headache, and of deafness in the left ear. He was feeling very much better in every way, was quicker of comprehension; had returned to work, and had not fallen or noticed that he staggered recently. I have examined him from time to time since; and on my last examination, Feb. 26, 1911, Dr. Frazier being at my office, there was no swelling of either disk, but both were reddened. The patient said that he had worked steadily, and had splendid health since being given the specific treatment; and that he had kept it up at times ever since his leaving the hospital. There is no diplopia, and the patient feels that he is cured.

CASE 8.—*Patient.*—In June, 1908, I was on my vacation, and was asked by a physician in a small country town to see what he thought was a very obscure case in a child of 2½ years. The child had been ill for several months; had had difficulty in retaining food, had not been able to walk, and an attempt usually brought a fall, more often to the left side.

Examination.—I found the child sitting on the floor, its left hand at its side, spread out on the floor as if in the position of bracing itself. The head was large and undoubtedly hydrocephalic. The child looked fairly well nourished. There was no dilatation of the pupils, and the reaction to light was normal. There was no strabismus. Having no ophthalmoscope with me, and feeling sure that the trouble was central, as the attending physician had suggested, I left some atropin to be instilled; and the next day I again visited the patient with a retinoscope of my own devising—a small toilet mirror, from which I had scraped some of the silvering on the back of the mirror—with which I examined the fundi. I found choked disk in each eye, but was unable to estimate the amount of swelling.

The case occurred some miles from Fort Wayne, and I referred the patient to Dr. A. A. Bulson, who wrote me, under date of July 8, 1908, as follows: "The child has double choked disk, and all the elements of intracranial pressure; is unable to walk or sit up or use its arms. The tendon reflexes are entirely absent. There was but little response to the pupillary reaction, and the family reported some transient facial paralysis, and while the child was in Fort Wayne it developed a partial facial paralysis on one side. Owing to the unfavorable outlook given the family, they took the child to an osteopath, who diagnosed a vertebral dislocation, which he said he could cure. I do not doubt this was a cerebellar lesion, although there seemed to be a general meningeal involvement."

The child is still living but is totally blind; it can recognize different members of the family by their voices. It has occasional convulsions, is helpless and is only able to utter a very few words. The head is extremely large.

CASE 9.—*Patient.*—In February, 1908, I was called by Dr. A. W. Booth to see C. Y., aged 55, an accountant. For some months past he had had what he supposed was digestive trouble, and had frequent attacks of vomiting. He also had severe attacks of vertigo, with dim vision lasting from a few seconds to several minutes, at which times he said he had great difficulty in maintaining his balance. He had also noticed for some months past that in walking he invariably deviated to the left; and it was difficult for him to follow an ordinary walk without unconsciously getting to the left side. He had also noticed that at times his legs seemed weak, and that he staggered. The vomiting was expulsive in character, and at times he choked while eating. The vertigo and vomiting had necessitated his going to bed, and if he was lying prone he was much more comfortable; only that at times he had severe vertigo in this position.

Examination.—The patellar reflexes were normal. The field for form roughly taken was normal. There was no paralysis of eye muscles, nor was there drooping of the lids. The movements of the eyes were carried out in a somewhat jerky manner, and the patient was unable to rotate either eye to the left side as far as he could to the right. At times he had some nystagmus when the eyes were rotated to the left. There was no defect in vision in the right eye, and there were no fundus changes. In the left eye, the upper margin of the disk was a little obscure, and there was a little congestion of this disk, but not what one would call a neuritis; vision was normal. Sitting up quickly in bed was apt to bring on vomiting and an increase of nystagmus. The patient had no loss of taste or smell, but was totally deaf in the left ear.

Three years before he had consulted me concerning his ears; and my notes show his bone conduction in that ear at that time was not normal; and his hearing for the watch 10 inches, and he suffered from tinnitis aurium. At this time he did not complain to me of any of the symptoms here given; and thought that inflation several times did his hearing good. He, however, did not return to me for further treatment.

If he was set upright in bed, and especially if taken out of the bed onto a chair, he began to have attacks of typical Jacksonian epilepsy. The attack began invariably in the left hand and arm; then spread to the left foot, and rapidly became general in character, and was of short duration. There was no exaggeration or loss of patellar reflexes. The patient was clear in mind, but was often puzzled to speak the word he wished, and at times his speech was difficult. He had no sensory disturbance or motor paralysis. From his inability to retain food he rapidly emaciated, and died about six weeks after I first saw him.

Necropsy.—The cerebrum was found normal throughout, but the left hemisphere of the cerebellum to the outer side was the site of a large, irregular, softened mass, which on examination was found to be sarcoma.

408 North Main Street.

ABSTRACT OF DISCUSSION

DR. HARVEY CUSHING, Baltimore: A thorough neurologic examination is an arduous undertaking. It means an individual study of hours' duration, such a study as can be satisfactorily made only when the patient is in the hospital under observation for a number of days. Even for a proper investigation of the ophthalmologic conditions alone a long time is required if perimetry is to be invariably included, as it should be in all cases where tumor is even suspected; and when we consider the fact that we must examine not only the other special sense organs with like care, but the functional status of all the cerebral nerves as well as of the cerebrum and cerebellum themselves, the examination of a single case becomes an elaborate and time-consuming matter.

It is wise to follow a definite rule of procedure, so that no individual symptom deserving investigation will be found subsequently to have been overlooked. It would be well if we could all agree on some definite schedule which all would follow. It would greatly lighten the labors of all who feel called on to peruse the records of neurologic examinations if a certain sequence in the record were invariably followed.

We have seen many illustrations of so-called "albuminuric retinitis" in individuals who were subsequently proved to be carrying tumors. We have, contrariwise, seen patients who to all appearances were suffering from brain tumor who were subsequentiy shown to have nephritis. It is often exceedingly difficult to distinguish the changes in the eye-grounds in the two conditions.

It is interesting that in one of Dr. Voorhees' cases the patient appeared to have these periods of temporary amaurosis as an early symptom of the disease. I had always supposed this to be a relatively late symptom of choked disk. At all events these periods of passing blindness are much more frequent comparatively late in the disease.

We are inclined to agree with Sir Victor Horsley that in supratentorial lesions the choked disk is apt to be greater on the side of the lesion, but this refers to the length of the process rather than to the measurable height of the swollen nerve head. A choked disk which has advanced to the stage of atrophy with blindness due to the new tissue contraction and consequent lowering of the height of the disk may again become elevated with removal of cerebrospinal fluid tension. One must remember, too, that a supratentorial lesion, such as a lateral recess tumor, may exist for years without any change in the eye-grounds, until a slight blocking of the iter may cause a choked disk of high degree to appear abruptly. Again, a pituitary tumor may reach a considerable size and cause primary atrophy alone, but a choked disk will be immediately superimposed as soon as the growth projects into the third ventricle far enough to produce a ventricular hydrops by blocking the foramina of Monro.

So far as the eyes are concerned, the results of operation in the late stages are not very brilliant. The chronic changes and new tissue formation often shut down on and effectually choke the optic nerves; and in a patient who still retains some degree of vision before operation it is heartrending to have the perception of light fade away after a successful decompression which has relieved all the other symptoms. The

failure to make careful neurologic studies, such as Dr. Voorhees has given his patients, until vision has been nearly lost, not only may court the disaster of blindness, but may effectually prevent any subsequent possibility of making a localizing diagnosis. This is likely to be so since we are cut off from all recourse to perimetry, and perimetry is often the only possible aid to the localization of occipital and temporal lobe tumors.

With our present means of recognizing, and vigorous measures for combating syphilis, we no longer need to elaborate on the advisability or otherwise of preliminary specific treatment in these cases. The presence of a positive Wassermann reaction justifies delay for a week or two at the most. Vigorous treatment and possibly the use of salvarsan will promptly decide whether the process will lend itself to these corrective measures. In case there is any doubt, provided the eyes are seriously implicated, it is much better to decompress first and institute medicinal treatment later, for many of the fibrous cerebral gummata are notoriously resistant to the usual antiluetic measures. We must not forget, too, that pressure symptoms of certain of the gliomata are ameliorated temporarily by massive doses of the iodids. This fact has proved the source of dire misfortune for many a poor soul actually carrying a removable non-syphilitic growth.

DR. SHERMAN VOORHEES, Elmira, N. Y.: What has been driven home to me is the fact that these cases come to the ophthalmologist so late, and that they have been treated for all manner of things by their family physicians. If the patient has had vomiting they have done all sorts of things for stomach trouble; and if he has complained of headache he has been treated for headache, and it has been symptomatic treatment all the way through until the time has gone by when anyone can do much. But for that vomiting and for the relief of the extra-mental symptoms that occur late in brain tumor, I believe that decompression is warranted. I have had a number of decompressions done—two just recently—in which the vision failed rapidly after the decompression. It occurs, not because of the decompression, but because of the changes inaugurated prior to the operation; but it seems to come on more rapidly after the operation. The temporary amaurosis Dr. Cushing speaks of I have taken largely from the statements of the patients. In one case the patient said the first thing he recognized was this temporary blindness. He would be walking about or at the table, and would be suddenly seized with blindness, which would clear up. That case had gone on to complete blindness before any neurologist or ophthalmologist had been consulted. It was simply to call attention to some things in the differential diagnosis that I have reported the cases. I have some seven other cases that I mean to report soon. Whether I have seen more than some one else I do not know. I shall ask Dr. Cushing. I am glad that I live close to Baltimore and Philadelphia where I can have the opinions of the best surgeons and neurologists, as I have often done. Dr. Cushing speaks of the side of the greater swelling, and especially of the change, in the nerve-head, as determining which side the lesion is on. In a case which I have had of subtentorial decompression the patient came with a neuritis of the right eye, occupying about seven-tenths of the right disk, with absolutely no change in the nerve-head until about eight weeks following, when there was a neuritis on the left side but with deafness in the left ear. The patient was a woman of 62. At the operation we found a tumor of the left hemisphere of the cerebellum.

Tests of Efficiency for Hygienic Measures.—It is impossible at present to apply direct tests of efficiency to some measures that undoubtedly promote health, says Prof. E. O. Jordan in *Science* (June 2, 1911). The influence of playgrounds, public baths, regulation of the hours of labor in extra-arduous industries and the like is real if it cannot be accurately determined or estimated. Many topics need investigation in order to discover their real bearing on the public health. Among these are such matters as the effect of a smoky atmosphere, the alleged nervous strain due to city noise and numerous important questions in the domain of food adulteration and contamination.

SUBHYALOID AND VITREOUS HEMORRHAGES

A STUDY OF POSSIBLE SYSTEMIC CAUSES *

HIRAM WOODS, M.D.
BALTIMORE

This paper is a study of a subject of which we confessedly know very little, and is undertaken for the following reasons: 1. Its importance. 2. The possibility that what I shall call the "new attitude" of members of this Section toward ocular lesions of uncertain etiology may, during discussion, bring out important truths. At any rate, this "attitude" means that oculists are awakening to their own responsibility of tracing systemic causes, not simply making the diagnosis of ocular condition and referring patient and diagnosis to some physician, who, the oculist is often sure, will go no farther.

This mental change on our own part is worthy of emphasis, and if, for the time being, we can do little more than recognize the problems, we should keep their existence constantly before us. Their nature may be briefly stated: Syphilis, tuberculosis, rheumatism are thought to be the most prolific causes of eye diseases. The first is often undiscoverable clinically or in the history of the patient. The same is true of the second. As to the third, excluding gonorrheal arthritis, and limiting consideration to the disease arthritic rheumatism, the average oculist, after years of experience, can probably count on the fingers of one hand the cases of "rheumatic" eye disease which he has observed. Yet when he enters the great *terra incognita* of "chronic" rheumatism, "muscular" rheumatism, etc., cases abound. He cannot define this condition; neither can his confrère, the internist.

Modern methods of studying mysterious eye lesions are based on the use made of laboratory evidence and pathologic results of syphilis, tuberculosis, and what really underlies that group of general symptoms to which the term "chronic rheumatism" has for years been applied, and which, in one form or another, so often are associated with ocular lesions. How study of this sort has taken us into fields we little dreamed of, one can easily see by looking at our proceedings of the past few years. What is true of the three systemic troubles mentioned, is equally true of constipation, menstrual and pelvic anomalies, anemia, malaria, nephritis, pregnancy, etc. In other words, given an ocular condition, functional or organic, not accounted for by the state of the eye itself, it becomes our duty to note everything wrong anywhere, and to determine the effect of this on the eye.

It was in this spirit, and at the request of our Chairman, that I undertook the study herein presented. I felt in the beginning that my personal experience and knowledge were totally unequal to the task. A review of even our newest text-books showed that little regarding underlying conditions is known. The objective appearance of vitreous and subhyaloid hemorrhage is given. Some authors stop there. Others state that the source of the hemorrhage is usually the uveal circulation, with the retinal vessels occasionally responsible. A few, notably, Fuchs, de Schweinitz and Weeks, tell about the reasons for the break in the vessels. But all this is rather suggestive than conclusive, and necessarily so; for it is not the function of a special author to do more than suggest lines of general investi-

* Read in the Section on Ophthalmology of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

gation. In current literature, many cases are reported with nothing except the objective findings, age of patient, etc. In only a few, so far as I have been able to discover, are the reports specially instructive.

Then I decided to turn to men in our own Section, men of large clinical experience, trained observation and judgment, and to ask their aid. They were all busy men, and for their help I wish to express the warmest thanks. Many took the trouble to analyze their cases, while others, with no time to do this, gave, what is just as valuable, convictions based on long observation. I regret that some of the replies have come in only while this introduction is being written, and too late for incorporation in the report. Nor could I, without making the paper inexcusably long, even seek information from all available sources. A few special features were dwelt on in my inquiries: age, condition of the eye, systemic lesions, blood-pressure, fate of the affected eye and of the patient. Some of my correspondents had never seen cases, and one asked what I meant. This is not particularly surprising when one considers that in an article by Serini and Bourdeaux,[1] it is stated that "essential relapsing hemorrhages" appear about once or twice in 5,000 cases. Following are some of the replies I received:

REPORTS OF OBSERVATIONS

DR. MELVILLE BLACK, Denver: Youngest patient 21, oldest 72. When blood-pressure was low I usually found dilated heart or auto-infection. With high blood-pressure, arteriosclerosis, incipient and advanced kidney degeneration. Blood-pressure was taken in every case in last eight years, and was less than 110 in 60 per cent.

Ultimate Results:—Glaucoma resulted and enucleation was done in two cases. Young patients with low pressure usually recovered, though one patient had four relapses. General health normal. Older patients with arteriosclerosis, nephritis, high blood-pressure did well or badly according to progress of general disease. Absolute milk diet recommended for reduction of B-P.

DR. JAMES H. BORDLEY, Baltimore: *Case* 1.—Female, aged 52, had repeated hemorrhages from 17 to 29; dense hyaloid opacities in right eye, in left, vision = fingers (?). Both lenses, which were clear, were removed and hyaloid needled. Right eye showed proliferating retinitis. Left recovered V. to 10/50.

General condition: Aortic stenosis; blood-pressure 190; nephritis, indicanuria; patient later developed carotid aneurysm.

Case 2.—Woman, aged 56, had vitreous hemorrhages from 18 to 30. Sight completely lost at 40. Lenses cloudy, no light perception in either eye. Aneurysm of aorta, nephritis, indicanuria, tuberculosis of lungs; blood-pressure 220.

Case 3.—Man, aged 45, had been in German army, but compelled to retire at 23 because of repeated vitreous hemorrhages in right eye; right eye was phthisical; left had cataract. After removal, retinitis proliferans was found but sufficient sight remained to enable patient to do moderate laboring work. Blood-pressure 185; casts, indicanuria, albumin, arteriosclerosis; patient reacts to tuberculin.

Case 4.—Man, aged 26; history of lost right eye at 23, retinitis proliferans. In left, vitreous hemorrhage. General condition: Blood, normal; blood-pressure, 110; hard radials, indicanuria; positive reaction to tuberculin, but no clinical tuberculosis. Under tuberculin treatment, and later potassium iodid, hemorrhage cleared and V.=20/30. Several months later it was learned through the mail that the left eye had gone completely blind. Cause unknown.

Case 5.—Man, aged 29, had first hemorrhage at 20 in right eye; several hemorrhages in a few months. Left eye attacked two years later. No hemorrhage for three years. Marked retinitis proliferans, but with sight good enough to enable patient to hold a semiclerical position. Blood-pressure was 115. Patient reacts to tuberculin; there was no clinical tuberculosis; Wassermann negative; marked and persistent indicanuria.

Case 6.—Man, aged 23, had first hemorrhage in left eye at 23; twelve since, becoming more frequent the past year. Tuberculin reaction positive; Wassermann negative; healed lesion at right apex; arteriosclerosis; blood-pressure taken by different men and with different instruments, constantly varied from 120 to 220; urine normal, but for very marked indicanuria. Patient was treated with small doses of tuberculin, two injections of animal serum, and later sent to the mountains, where he did well; gained in weight and had no more hemorrhages.

Bordley reports also having seen several patients with brain tumors, the extravasations absorbing; states that he has seen a great many cases but kept no notes.

DR. H. B. CHANDLER, Boston: Four cases recently in private practice, all males, between 25 and 34. Three of them had one eye affected, one both eyes within two years. Nothing else wrong in eyes, and careful physical examination revealed no cause. Tuberculin tests not used, as from Chandler's experience in infirmary, all cases reacted positively. Blood-pressure taken in only one case; abnormally high. Treatment: Iodids, sweating and injection of blood-serum with improvement in vision in all cases.

DR. ALBERT E. BULSON, JR., Fort Wayne, Ind.: *Case* 1.—Man, aged 21, seen four years ago, was blind in one eye from extensive vitreous hemorrhage. Patient was under constant observation for year and a half. He had some fifteen or more hemorrhages during these years, one following the other so closely that for a long time fundal examination was impossible. Eventually the hemorrhages ceased, the vitreous cleared and left 20/15 V., which has persisted for two years. The most painstaking clinical examinations were made without results, save pronounced indicanuria. After clearing of the vitreous, no lesion was found in the fundus.

Case 2.—A healthy young farmer had been under observation a year and had fifteen or twenty hemorrhages, each following rapidly on its predecessor. The fundus has never yet been seen. The man had some hemorrhages while in bed. He left the hospital and returned to his work. Recently he wrote that he had not had a hemorrhage for several weeks and he could read the headlines in the papers. The man has been subjected to rigid clinical and experimental tests, but nothing has been found save a persistent and excessive indicanuria. Both of these patients were treated with diaphoresis, potassium iodid, etc. The reporter thinks the blood came from the ciliary bodies in both cases, largely because there was no evidence of fundal lesion, and the retinal vessels, when uncovered, were unaltered.

DR. JOHN T. CARPENTER, Philadelphia: Patient seen in 1898 (only one in private practice), was a man, 30 years old, with intense neuroretinitis with retinal hemorrhages and exudates, veins swollen and tortuous, followed by recurrent vitreous hemorrhages, leaving vitreous dark. General health was excellent, but patient was an alcoholic. There was family history of gout. Patient was very constipated. Eye was totally lost, and reflex destroyed.

DR. E. A. DAVIS, New York: *Case* 1.—Man, aged 30, was first seen for refraction error; V. 20/15 in each eye. A year later patient suddenly lost sight in right eye from vitreous hemorrhage on temporal side. Davis thought the blood came from chorioid, as at the upper end of the hemorrhage near the macula, the sclera showed through. Retina was partially detached at the temporal side and below. V. = fingers at 4 feet. In left eye there was subhyaloid hemorrhage just below macula, with a few fine retinal hemorrhages. V. = 20/20, in spite of lesions. Only systemic abnormality was traces of albumin and a few hyaline casts. Under treatment, nephritis cleared and hemorrhage was absorbed. In the right eye, which first showed extravasations, blood absorbed and retina reattached, with V. = 20/30. Later retinitis proliferans with reduced V. = fingers. Left eye retained V. = 20/15 to last observation.

1. Arch. d'Opht., March, 1903; quoted in Ann. Ophth., July, 1903.

Case 2.—Patient was a woman, married, aged 22. Menstruation did not begin before 21, one year before being seen by Davis. Two days before menstruation V. in right eye was suddenly lost. It gradually returned until it reached 20/30. There was no lesion in the eye. When under observation the left vitreous showed a balloon-shaped hemorrhage V. = 4/200, becoming 20/200 after two months. Hemorrhage was thought to be of chorioidal origin.

DR. ALLEN GREENWOOD, Boston: His patients have been between 20 or 40 years of age. None of them showed fundal or systemic abnormality. He describes the history of one patient as follows: "A watch-maker had over thirty hemorrhages, and frequently only light perception in one eye. The other eye had only one hemorrhage. The thirty-odd hemorrhages occurred during a space of eight years. Five years ago the patient was appointed to the police force, and left his sedentary life for an active one of constant walking. No hemorrhages since out-door work, and the eye of many hemorrhages now has a vision of 20/30, in spite of many vitreous strings."

DR. E. E. HOLT, Portland, Me.: Holt thinks that in most of his cases there has been nothing wrong in the eye save the hemorrhage, and that some form of nephritis was demonstrable in most of them. In a case seen sixteen years ago, with V. = 0.1, treated with "massage and cataphoresis," normal vision returned after a year, and was present fifteen years later. This was observed when the patient, a woman, came on account of a hemorrhage in the other eye, which recovered under the same treatment.

DR. B. R. KENNON, Norfolk, Va.: Kennon reports having had but one case, in a man whose first hemorrhage occurred at the age of 22. There were opacities from former hemorrhages when the case was under observation. Careful clinical search did not reveal constitutional lesion. Sight was gradually lost, each hemorrhage destroying a little of what was left.

DR. F. PARK LEWIS, Buffalo: Lewis has seen very few cases, and these before tuberculin tests, etc., were employed. A girl of 15 in perfect health, so far as clinical investigations indicated, had one single hemorrhage which resulted in retinal scars that damaged vision. She has since grown into robust womanhood. A boy had during adolescence repeated subhyaloid hemorrhages which destroyed the eye; general health remained unimpaired. He has grown to manhood without developing ill health.

DR. CHARLES H. MAY, New York: May reports three cases, patients aged 16, 20 and 36, all males. In all the eye structures were normal, barring the hemorrhages, and careful clinical study showed nothing. Two patients regained normal vision, one after a month, the other in a year. The history of the other is not known. Tests for tuberculosis were not made.

DR. H. MOULTON, Fort Smith, Ark.: Moulton reports a case in man of 60, with constant recurrences during five years, ending in blindness. General health robust at 70.

A second patient, 45, syphilitic, recovered normal vision in three months, and had no recurrence after six months.

Dr. Moulton adds that his youngest patient was 24, and most of them were between 40 and 60. Intra-ocular structures were normal, or, at the most, showed tortuous veins; often circumscribed patches of chorioretinitis. The majority of his patients showed positive clinical proof of syphilis. One case occurred in a cured lung tuberculosis, and no others showed evidence, though tests were not used. Arterial tension was, as a rule, high.

DR. BROWN PUSEY, Chicago: Notes on two cases seen during past year. *Case* 1.—Patient was a man, aged 65; eye structures normal. Nothing is given about systemic examinations save blood-pressure, which was 200. Hemorrhage first in right eye, clearing in six months, with normal vision. Same experience four months later in left eye, and a second hemorrhage after same period in right eye. Patient recovered from all hemorrhages with normal vision.

Case 2.—Man, aged 43, seven years previously, had hemorrhage in left eye, which cleared, followed after six months by loss of eye from hemorrhagic glaucoma. First hemorrhage in right eye was one year, and second, six months before observation. Vitreous was full of opacities, and V. = 6/45. Blood-pressure was normal. Tuberculous pleurisy at age of 21. Family history of tuberculosis; office man, always constipated.

DR. EDGAR S. THOMPSON, New York: *Case* 1.—Man, aged 23; subhyaloid hemorrhage after pole-vaulting. Cleared up perfectly. Nothing in history or general clinical findings to explain hemorrhage.

Case 2.—Man, aged 55, had large subhyaloid hemorrhage in course of albuminuric retinitis. Eye was lost from glaucoma and enucleated.

Some of the men to whom I wrote gave their impressions from observation rather than detailed accounts of cases. Many of these are noteworthy. Bruns, of New Orleans, has seen cases in young adults with nothing else wrong. Some patients recovered, some lost the eyes.

The late Dr. Bull, of New York, thought the subhyaloid variety usually develops destructive chorioretinitis; the vitreous, general hyalitis and uveitis. Patients of both classes are apt to show cardiovascular or renal disease, "if they live long enough."

Callan, of New York, says that in young patients the eye structures are usually normal; in older persons there is arteriosclerosis. He thinks tests for tuberculosis unreliable unless other evidences are present.

De Schweinitz, of Philadelphia, excludes in his letter the hemorrhages in old persons from arteriosclerosis. Others occur between 18 and 30. Intra-ocular structures, he says, are often normal; nothing to account for hemorrhage. He twice discovered patches of chorioiditis. Regarding constitutional causes, he puts first, "so-called auto-intoxication as determined by the tests which I believe to be necessary and which are detailed in my paper on that subject before the Chicago meeting."[2] Tuberculosis, either clinically present or demonstrated by tests, seems to him an important causative factor, but treatment by tuberculin, in at least one case whose record he sent me, was negative. Blood-pressure in these young patients was never high. Most cases went on to loss of the eyes from vitreous exudates, detached retina, secondary cataracts, vascular formation in vitreous, etc.

Ellis, of Los Angeles, says that cases in young people usually resulted in greater or less blindness from such causes as mentioned in de Schweinitz' note. General condition was usually good save for constipation, etc.

Friedenberg, of New York, has no data on tuberculosis. Syphilis was a frequent cause. Anemia with suppressed menses, dysmenorrhea, etc., have been associated conditions. Ocular structures were usually normal.

W. Reber, of Philadelphia, mentions four youthful patients, in three of whom the eye structures were normal. The other showed evidence of sclerosis in the retinal vessels. Three regained normal vision. The hemorrhage in the fourth case occurred while straining at stool.

Risley, of Philadelphia, has seen a few cases in children; thought the vitreous webs and chorioidal patches, which impaired vision, resulted from injury during parturition. Most other cases came in advanced life from cardiovascular diseases. Blood-pressure is usually high in this variety. Risley has never seen cases in which he thought it advisable to use tuberculin tests. Many young and clinically healthy adults recover.

Roy, of Atlanta, seems to have had experience confined to the sclerotic cases in advanced life.

Suker, of Chicago, seems to have had the same experience; his cases usually showed some permanent

2. Tr. Sec. on Ophth., A. M. A., 1908

impairment of vision, attributable to the general condition.

Thorington, of Philadelphia, says that his patients were usually over 50. They improved only when the condition was due to syphilis. Arteriosclerotic or nephritic changes usually present.

J. E. Weeks, of New York, finds that cases usually occur between 15 and 22. Sometimes small venous hemorrhages in the retina precede subhyaloid or vitreous hemorrhages. Among causes he notes establishment of menstruation, constipation, irregularities of circulation. He has never used tuberculin tests. A girl of 16 lost both eyes from secondary glaucoma. In other young persons hemorrhages have recurred without serious impairment of vision.

To these cases, I add five which have come under my care recently.

CASE 1.—Mrs. B., 29 years old, first consulted me in 1899 for asthenopia due to simple hyperopic astigmatism of 0.5 D. at 90°. She wore these glasses till she came to me again in November, 1909, to have them changed, as the eyes tired in reading. Vision, accommodation and muscular balance were normal. In both eyes were found numerous exudates beneath the retinal vessels; small extravasations were in each retina, obliterating the vessels, and careful examination showed small hemorrhages in the vitreous. She was sent to the hospital for clinical investigation. Dr. Gordon Wilson, clinical professor of medicine at the University of Maryland, was asked to make the examination, and I am indebted greatly to Dr. J. W. Robertson, now of Onancock, Va., and then hospital intern, for pains-taking observations. Only the following abnormalities were found: Decided accentuation of the second heart sound, and a transient albuminuria, with a few hyaline casts. The daily output of urine never exceeded 16 ounces. Blood-pressure was, on entrance, 240 mm. All the usual remedies were used without effect. Thyroid extract nauseated at once. Milk diet did the same. After a week I asked Dr. Arthur M. Shipley, of the surgical staff, to do a phlebotomy. He extracted 12 ounces of blood, with a blood-pressure reduction to 195 mm., the pressure returning to the old mark within twenty-four hours. Tuberculin tests, subcutaneous and von Pirquet's, were negative. There was not the least reason to suspect syphilis, and at that time I was not familiar with the Wassermann test. An interesting item in the patient's family history is that five relatives in preceding generations had died before the age of 40 from cerebral apoplexy. The patient went home; my diagnosis of nephritis was denied by her local physician, and we all came in for considerable criticism on account of our so-called "thoroughness;" this being the alleged cause of her equally alleged nervous prostration. The patient, however, lost her sight and a year later died.

This case does not, possibly, in the strictest sense, belong to my subject. Some of the small hemorrhages, however, were in the vitreous. Nor is it proper to draw a hard and fast line between various kinds of intra-ocular hemorrhage. The case illustrates one of the points made by Black in his report: the relation of high blood-pressure to the causative disease.

CASE 2.—Mrs. T., aged 67, living in a small town in Maryland, was sent to me in December, 1910, for a change of glasses. Correction of low hypermetropia gave normal vision in each eye. Numerous small hemorrhages were found, apparently in the retina, near the right disk. The patient was not willing to stay in Baltimore long enough for a thorough examination, and I had to content myself with finding traces of indicanuria, not apparently excessive, and a blood-pressure of 220 mm. These findings were reported to her physician. She saw me again in February last. The old hemorrhages had absorbed, and there were many little ones in the vitreous, four to five diopters in front of the retina. The only thing in her history of note is a vesicovaginal fistula which was cured by operation. Outside of her right eye the patient seemed healthy; but I suspected that there was something she was unwilling to tell. I could not impress her with the possible gravity of the case, and she would not allow such tests as I wanted to use. At this writing, April 8, 1911, she is reported "well."

CASE 3.—During December, 1910, a physician in country practice, 25 years of age, consulted me for sudden blindness in the right eye, coming on during a fit of coughing. A large subhyaloid hemorrhage covered the right foveal region. The retinal vessels could be traced to their usual visible limit, and were normal. No lesion, save the hemorrhage, was found. The left eye had 20/15 vision, and had nothing the matter with it. I had the patient examined by a competent internist, who gave him a clean bill of health with the exception of a blood-pressure of 210 mm., and "decided indicanuria." The man is an athlete, and looks in superb physical shape. He denied the possibility of syphilis or tuberculosis, and showed no indication of either. He was summoned to his home in the South before tests for tuberculosis could be used. A letter from him under date of March 3, states that the eye previously blind can now read large print, and is evidently clearing. I urged on him the necessity of running down the cause, if possible, but if he has undergone further examinations he did not disclose their result.

CASE 4.—A boy, 15 years of age, worker in a wagon factory, came to my clinic at the Presbyterian Eye, Ear and Throat Hospital in October, 1910. He showed a left external squint, and stated that he had lost the sight of this eye some six months previously; that it had gone out suddenly, and he had never had the eye examined. The right eye was normal. Examination showed a cloudy vitreous, numerous large opacities and two or three vitreous hemorrhages, well anteriorly. Toward the nasal side could be seen a beginning retinitis proliferans. This boy was told to enter the hospital, but would not do so. I did not see him again until March. General examination showed nothing wrong save a possible slight splenic enlargement. There was some indicanuria, but no excess. Subcutaneous tuberculin test was followed by a violent local reaction and temperature of 100.5 F. There was no external local reaction in the eye, and I could not judge of the intra-ocular effect, if present. Following is the report of blood examination: Red cells, 4,700,000; leukocytes, 29,600; hemoglobin, 90 per cent.; polymorphs, 80 per cent.; small mononuclears, 15 per cent.; large mononuclears, 3 per cent.; eosinophils, 2 per cent. This is simply an inflammatory reaction. The retinitis proliferans shows increase. The general health seems unimpaired, and the patient is continuing his indoor work "until an outside job turns up." The family history gives no indication of syphilis; so, with positive tuberculous findings, a Wassermann test was deemed unnecessary. The fact that the boy was not in the hospital for a day or two before the tuberculin test must be considered in drawing conclusions regarding the febrile reaction. Blood-pressure, 120 mm.

CASE 5.—Mrs. T., aged 29, came to me Nov. 15, 1910, for sudden loss of vision in the left eye. The immediate history was that on November 12 she had gone into the cellar to hunt up a reported leak, and had suddenly found herself in water up to her knees. Two hours or so later she knew that something had happened to her left eye. I found the vitreous absolutely black, save for small areas, down and up, which gave a fair reflex. The patient was subjected to a careful physical examination by Dr. Wilson. She was the mother of two children and had had one miscarriage—her first pregnancy. She weighed 140 pounds and looked in excellent health. Menstruation had always been regular, and she had nursed all her children. Syphilis, tuberculosis and intestinal toxemia were excluded by examinations and tests. She was not menstruating when the eye hemorrhage occurred. For want of better indications in the way of treatment, she was put to bed in the hospital, given pilocarpin sweats and potassium internally. After two weeks the vitreous hemorrhage had cleared sufficiently to enable me to see a large subhyaloid hemorrhage over the fovea, and extending nasally over the disk border. A few smaller subhyaloid hemorrhages were seen at the nasal and lower edge of the disk. All of these gradually cleared, the foveal extravasation being the most persistent, while the disk margins were entirely free after a month. On January 19, the patient had central vision of 8/200, and could trace the perimetric disk in all

parts of the field. On February 9 I observed a recurrent hemorrhage over the upper and outer disk margin. Blood-pressure varied between 115 and 130 mm. After the second hemorrhage in February, I urged the patient to have some teeth cared for, to which Dr. Wilson had called my attention as a possible portal of entry for infection. What influence, if any, this had I cannot say; but late in March central vision had increased to 20/100, indistinctly, and there had been no further hemorrhages. As study of the fundus became possible, the uncovered retinal vessels came out normal.

DEDUCTIONS

1. *Results.*—So far as the above collective observations admit of analysis, from the standpoint of results, the following is approximately true: Of forty-eight eyes, twenty recovered with practically normal vision to the time of last observation. Seven obtained more or less improvement, the nature of the residual lesion not being given. Seven developed retinitis proliferans, three of these being totally blind, the others preserving sight enough to do some work. The other fourteen were totally lost, four from secondary glaucoma, one from phthisis bulbi, and nine from causes not specified, probably vitreous opacities, retinal detachment, etc. Seventeen out of the forty-eight eyes were lost.

2. *Recoveries.*—A number of cases in the foregoing reports and in literature, showed one hemorrhage, or recurrent hemorrhages, producing temporary and complete blindness. Then normal vision was slowly restored and retained. Nothing was found in the eye to account for hemorrhage. The source of blood is generally ascribed to the chorioidal vessels. This is based on the facts that the retinal vessels, when they can be seen, as in the subhyaloid variety, show nothing wrong, and after absorption of the blood, the same is true. It is hard to think of normal retinal vessels being responsible for so much hemorrhage. A still stronger reason is found in our knowledge derived from recent studies in chorioidal diseases. We know that many pathologic conditions are associated with exudative chorioiditis. Intestinal parasites, "indigestion," chronic appendicitis, and malaria, may be mentioned. We attribute these ocular lesions to toxins or organisms in the blood, and their manifestation in the chorioid to the large vascular area therein. It is not going very far to imagine the same influences breaking down a vessel and producing hemorrhage. So long as vascular resistance is less than the acting cause, recurrence persists. When the cause is removed, through either intelligent diagnosis and treatment or general hygienic management, hemorrhages cease. Note, for instance, the cases reported by Greenwood and Bordley. Recovery of vision must depend on the harm done by one or more attacks, and recurrence must depend on intelligent or accidental removal of the cause.

3. *Concomitant Systemic Conditions.* — Blood-pressure. Black's remark is apparently borne out by the "returns." When high, it is usually associated with nephritis or arteriosclerosis. In each we have conditions directly calculated to produce hemorrhage through a previous arteritis or phlebitis. Bull believed that such patients always develop arteriosclerosis or nephritis, if they live long enough. One of my own patients was dead in a year of nephritis; yet no one would have made such a diagnosis on this young woman on the urinalysis and symptoms alone—outside of the intra-ocular hemorrhages and blood-pressure. C. S. G. Nagel[3] reports a case in which retinal hemorrhages were the first symptom of diabetes. (I call attention here to the previously expressed opinion that we must not differentiate intra-ocular hemorrhages too closely according to their situation.) The patient was apparently in good health. Nagel notes Leber's observation that retinal diabetic lesions occur only after years, and when emaciation and general decline are present. Webster Fox[4] discusses the relation of high pressure to intra-ocular hemorrhages, and shows the close relation between them and various forms of nephritis. In the article by Scrini and Bourdeaux,[1] the statement is made that these essential vitreous hemorrhages have no prognostic effect on general health. I think that this statement is to be accepted with allowance. Nagel's diabetic, and my first case are illustrations. My third belongs to the class which must be regarded with concern. Something caused the high arterial tension, and the fact that we do not know what it was in no way proves that it is not serious. I cannot extend the paper to quote other authors, but I am convinced that these hemorrhages, accompanied by high pressure, ought to be regarded as a possible early indication of chronic nephritis. But they occur, too, with low pressure. Black expresses the opinion that dilated heart or auto-infection is at the bottom of these. We still have the dilated heart to account for. Usually some systemic infection precedes this. Of course, the passive venous congestion might be a mechanical cause. As to auto-infection, i. e., absorption of either the organisms themselves or toxins, which might act deleteriously on small or terminal vessels, I believe that here we are approaching the main etiologic factor in most cases, and that careful search for the nature of the infection may often lead to the diagnosis of a condition giving no other symptom.

Axenfeld and Stock[5] report a case of a woman, 30 years of age, with a vitreous hemorrhage of the right eye. The left eye was normal; but several weeks later a grayish-yellow exudate appeared in the periphery of this eye. There was also a perivascular exudate along a retinal artery which ran toward the chorioidal focus. There was both general and local reaction to tuberculin in both eyes. "During the treatment with small doses of tuberculin the foci in the chorioid and perivascular exudate completely disappeared, and in the right eye, in which in the meantime an indolent posterior synechia appeared, the vitreous cleared. One must accept that in this case a chronic tuberculous uveitis had begun with the appearance of a simple hemorrhage in the vitreous, which surely had arisen from the retinal vessels." It seldom happens that one can observe such a sequel of events in these cases.

De Schweinitz and Holloway[6] report a remarkable case of retinal hemorrhages in a boy of 20, who gave a positive reaction for tuberculosis. The late Dr. Kipp, of Newark, reported an instructive case[7] in this connection. I call attention to my fourth case, which showed positive tuberculous reaction without symptoms outside the eye. Such observation seems to me to show that these cases, even if the eye gets well, must always be viewed with suspicion, and that it is best to treat them as though the diagnosis was made. Greenwood's policeman (given in this paper), and Bordley's sixth case are examples.

Indicanuria plays a large rôle in these concomitant systemic conditions. There is, I know, discussion regarding its value as a diagnostic sign; but its persistent presence in excess is generally thought indicative of disturb-

3. Nagel: Ophth. Rec., October, 1904; abstr. in Ann. Ophth., January, 1905.

4. Fox: Ophth. Rec., October, 1908.
5. Axenfeld and Stock: Klin. Monatsbl. f. Augenh., January 1911, p. 28.
6. Univ. Penn. Bull., March, 1910.
7. Arch. f. Ophth., v, 38.

ance of metabolism. It was observed in most of Bordley's and in Bulson's cases. It was seen in my series, but not in sufficient quantity to make us think it significant. In another[3] it was abundant.

The frequency of obstinate constipation in the description of these cases leads one to think that indican would be found more frequently if always looked for. It occurs without reference to blood-pressure. Where the pressure was high, as in Bordley's cases, there were other conditions, usually renal, to account for it. The close association of indicanuria with functional and organic uveal lesions has been presented to this Section too recently to need repetition. Vitreous hemorrhage, with tuberculosis (sometimes clinically undemonstrable) shows that this form of infection can produce vascular diseases in the eye. Indican in the urine means intestinal putrefaction, and this means not necessarily absorption of putrefactive toxins, but malassimilation, allowing absorption of other toxins, which, under better conditions, the system might avoid. Here we come against other concomitant conditions. Anemia, unless essential, must have a cause. Dysmenorrhea, amenorrhea, unless due to local conditions, often admit of an explanation which involves nutrition. They are but symptomatic of the same disturbance which causes the intra-ocular hemorrhage, and are not themselves a cause.

To discuss treatment of these hemorrhages is impossible, save to say that for the most part oculists have been using diaphoresis, the iodids, etc. With the natural tendency to absorb, it is hard to estimate the value of these remedies. It seems to me that we should view these cases about like this:

1. In older people, i. e., persons over 50, we usually have signs of arteriosclerosis, and if they are not present, the hemorrhage itself is evidence. Eliminating special causes of vascular changes—syphilis, nephritis, etc.—we have to manage, as best we can—or the internist has to manage—the vascular changes. Along this line, we shall get our best results.

2. In young people, whether there is a single hemorrhage or many, we are probably dealing with some infection or disease capable of producing vascular changes. High blood-pressure throws suspicion on the kidneys, whether or not there are other symptoms of nephritis. Anemia, menstrual disturbances, etc., are but symptomatic of malnutrition probably due to an infection. This may be tuberculous, and may be of some other kind, brought about through defective metabolism. Its presence and nature is to be determined by rigid laboratory examinations.

3. Even when we can find no cause, and have to resort to the "alterative" treatment, we should bear in mind that the cause has not been determined; that it is usually of a serious nature, and that it is well to give the patient the benefit of doubt with regard to the three causes apparently most apt to be found—tuberculosis, defective metabolism, nephritis.

842 Park Avenue.

ABSTRACT OF DISCUSSION

DR. W. H. ROBERTS, Pasadena, Cal.: I am not prepared to discuss the etiology of this class of troubles, but I wish to report two cases, each with a distinct tuberculous history.

Case 1.—Miss J. F. N., aged 64, came under my care Feb. 21, 1902. She had lived in California for several years and had recovered from a pulmonary tuberculosis. Vision O. S. had suddenly been reduced to counting fingers at five feet, and the vitreous was too full of blood to permit of a view of the fundus. Fundus O. D. normal; O. D. V. with correction 6/5. Later when the media of O. S. cleared, an almost complete detachment of the retina was found, and this eye has had little more than light perception since. January 16 of the following year she had hemorrhage in her right eye, mostly in the nerve-fiber layer, but some blood escaped into the vitreous. This was the beginning of a series of small hemorrhages occurring in this eye extending through a period of over seven years. She has had two partial detachments of her retina to the nasal side of the disk, which have readhered. The patient has been under constant observation for over nine years. She has been an ideal patient in every respect, obeying implicitly all orders, and is now in good physical and mental condition.

Case 2.—J. F. B., aged 20, was first seen Sept. 27, 1910. He was in a sanitarium for pulmonary tuberculosis. He had noticed black spots before each eye for some two months. At this time the periphery of each retina showed flame-shaped hemorrhages, mostly about the veins. Dec. 14, 1910, he had two subhyaloid hemorrhages below the macular region of the left eye. His blood-pressure has never been taken, but the coagulometer has shown very slow coagulation; hemoglobin 95 per cent. He was placed on calcium lactate but the hemorrhages persisted in recurring, and the coagulation of his blood continued to be tardy. Then as the hemorrhages seemed to come from the retinal veins, he was given fluid extract of hamamelis with immediate cessation of all hemorrhages up to the present time.

DR. ADOLF ALT, St. Louis: I have had occasion to examine a good many patients with hemorrhage into the vitreous, but only once have I seen an eye in which there was a diagnosis of subhyaloid hemorrhage in the macular region; and since Dr. Woods made the statement that the hemorrhage came from the ciliary veins, in my case it came from a retinal artery. The hemorrhage concerned chiefly the space between the retinal and the hyaloid. However, there was some hemorrhage in the nerve-fiber layer. I think in most cases the hemorrhage comes from the retinal vessels and not from the chorioidal or ciliary vessels. In all the cases I have seen there has been disease of the blood-vessels themselves.

DR. MELVILLE BLACK, Denver: Dr. Woods touched on a point that seems to me important concerning these hemorrhages, and the remarks of Dr. Alt suggested a possible explanation. We sometimes have subhyaloid hemorrhages which run into hemorrhagic glaucoma, and I think possibly the most rational explanation of these hemorrhages would be that they come from the ciliary region. I saw a woman about two months ago who had a very large vitreous hemorrhage, so large, as a matter of fact, that no light reflex whatever could be obtained, and it was difficult to say that it did not occupy practically all of the vitreous space. I saw her just before I left for this meeting. She came in with a steamy cornea and a tension by the tonometer of plus 3. She suffered pain and some vomiting and was in great distress. A good many of these cases of vitreous hemorrhage are subhyaloid hemorrhages terminating in hemorrhagic glaucoma, one of the most serious conditions that we have to contend with. I have seen several of these cases and in every one there has been a general autointoxication along the line suggested by Dr. Woods. In this case a very careful laboratory examination was made and it was found that certain excretory products were not being properly eliminated. In view of this fact this woman was placed on a glass of buttermilk every two hours, with a very plain vegetable diet. Nothing is hoped for from that treatment on the offending eye, but what is going to happen to the other eye? Patients should be put in a position in which there is no likelihood of a similar accident happening to it. The low blood-pressures have interested me for a good many years in connection with this question and it is very difficult to say what would be at one time a normal blood-pressure and at another time a low blood-pressure. If in a person with a blood-pressure running 140 it should drop to 100 or 110 it becomes an important matter, because it is a very low blood-pressure for that particular person. The low blood-pressure together with the factors that are back of it may get the patient into trouble. I do not think, however, that we should take the blood-pressure as

anything more than an index, or rather a danger signal to the conditions which are influencing the blood-pressure, and we as ophthalmologists are very poorly qualified to go into the necessary laboratory findings to get to the bottom of these troubles. We must have some one to do that in the most scientific and advanced manner possible, and by systematically following up these cases I believe we will have a very decidedly better understanding of the etiology and pathology and treatment of these conditions.

DR. EDWARD JACKSON, Denver: One way in which low blood-pressure may be a cause of hemorrhage is through thrombosis. A very low blood-pressure has been associated with forms of intraocular hemorrhage and other hemorrhages also, and it has been suggested that, when there is thrombosis in the small veins, hemorrhage follows. While this does not apply to recurrent hemorrhages, it is a possibility that might be borne in mind in any intra-ocular hemorrhage when we see the patient for the first time, for temporary causes may have produced a hemorrhage entirely apart from tuberculosis, syphilis or arteriosclerosis. I have in mind the case of an engineer, a healthy man, who came to me with a very clear explanation in his own mind of his intra-ocular hemorrhage. He said he had always been particularly subject to the influence of tobacco. He was one evening in a small room which got very thick with smoke, and he became markedly nauseated and had to get out. He did not vomit. There was no straining. After going out into the street, when he saw the street light, he saw a little drop coming down in front of his eye and the next day presented himself with a very typical subhyaloid hemorrhage in the macular region. Absorption was complete and vision was restored to normal, but he was very clear in his explanation, and I never could find any more probable explanation of that hemorrhage than that it was the temporary influence of the nausea producing the hemorrhage from a retinal vessel. I cannot conceive of such hemorrhages, which are sharply outlined in the retina, as having come from the advanced ciliary vessels.

DR. WILLIAM F. MITTENDORF, New York: The most serious cases are those in which the entire vitreous chamber is filled with blood. The vision, of course, is completely obscured. We cannot see any of the details of the fundus. I should like to mention here that one of the best remedies in my hands has been pilocarpin in very small doses, continued, in combination with massage. I have cleared up a good many cases by this means. Unfortunately in many of them the destruction of the vitreous humor and the interior of the eye is so complete that they resist all treatment. Fortunately, however, in the great majority of cases it is only one eye. The good eye does not necessarily follow the same course. I have observed cases of this kind for years in which one eye only suffered.

DR. CARL S. G. NAGEL, San Francisco: I should like to ask the essayist whether he has tried in these cases fibrolysin-thiosinamin. I know it is a drug somewhat discredited, but recently there has been published in the *Zeitschrift für Augenheilkunde* an article reporting results which were decidedly striking. Apart from that the doctor has been quoting a case of my own in the literature, and I should like to add with regard to subhyaloid hemorrhage and refer to a few points I made in a report in Wurdemann's *Ophthalmology* a few months ago. The wife of a physician suddenly lost her vision in one eye. An oculist was consulted and gave a bad prognosis on account of the hemorrhage in the macular region. This was a typical case of subhyaloid hemorrhage with a typical scotoma of umbrella shape. The patient recovered, as these patients generally do. I can remember four or five cases of that sort that I saw while in Uhthoff's service. There was a distinct history of articular rheumatism which had led to ankylosis of one elbow. Without throwing much light on it, the most interesting point seemed to be that this had occurred in one eye during the beginning of the menstrual period, and with the next menstrual period a very slight hemorrhage occurred in the other eye, the first eye having almost completely recovered in the meantime. Now in the second eye it would have been impossible to make out from the ophthalmoscopic picture in what layer the hemorrhage was, although the woman had a slight, indistinct scotoma; but having the experience with the other eye she could have observed it perhaps more distinctly than otherwise. But that led me to believe that these hemorrhages do occur sometimes in very slight form as in this case, and are overlooked or not rightly interpreted. I thought it might be possibly functional from the form of the scotoma, which, of course, will be inverted, occurring behind the nodal point. In this case the woman was intelligent. It struck me that it might be possible to use this feature of the inverted figure of the scotoma to the hemmorrhage to make out the diagnosis.

DR. H. W. WOODRUFF, Joliet, Ill.: I wish to ask Dr. Woods if he has ever found hemorrhages in other portions of the body associated with these subhyaloid and vitreous hemorrhages? It has always seemed strange to me that subconjunctival hemorrhages are so exceedingly common that we almost never find any symptoms of general disturbances, and are in the habit of looking on them as of very trivial importance.

People come to us with a history of waking in the morning and discovering this appearance in the eye. I once had a case of subconjunctival hemorrhage in a young girl without any history of cough or traumatism of any kind. Associated with it was a small hemorrhage in the retina. She recovered without any subjective disturbance of any kind. Perhaps Dr. Woods has had experience in similar cases.

DR. C. D. WESCOTT, Chicago: I have seen a number of cases such as Dr. Woods has described, and in my experience the patients past middle life who have these hemorrhages have arteriosclerosis, and the hemorrhages are easily attributed thereto.

In the younger patients it has been practically impossible for me or the internist to find out why they occur. Auto-intoxication, I believe, is present in many of these cases, but we do not know how auto-intoxication may cause retinal hemorrhage. Dr. Woodruff's point in regard to hemorrhages in other parts of the body is important, and I feel that we should warn these patients that a general examination is imperative. I think this paper points very strongly to our duty in all cases in which we find any alteration in the retinal circulation, to have the blood-pressure taken, and if it is found high to have a general examination; that the patient may have his life so regulated that he may not have subsequent hemorrhages into the retina, or, perhaps, apoplexy, which has followed so many of these cases of hemorrhage in the eye.

DR. F. T. ROGERS, Providence, R. I.: I wish to call attention to the difference between an exciting and a predisposing cause. I have seen two cases recently in which the predisposing cause was unknown, but the exciting cause was evident. One was the case of a lighthouse keeper who has had three attacks in the last year, and each one has come on within a few minutes of lighting the lamp. In another case the man was an electric light tester. It seemed to me that the exciting cause was the sudden impress of an exceedingly bright light.

DR. JOHN E. WEEKS, New York: We have a class of cases of hemorrhage into the vitreous occurring in young individuals that is unsatisfactory as far as etiology is concerned. These cases may affect one or both eyes. The hemorrhages are recurrent. I have seen two such cases in my practice. One I referred to in writing to Dr. Wood. In this case both eyes were lost in spite of everything that we could do so far as therapeutic measures were concerned. It was necessary to remove one eye because of secondary glaucoma. The patient was a girl 17 to 19 years of age, apparently in good health, except, perhaps, that she was somewhat anemic. The hemorrhages began in the right eye. She was under my observation at least two years, and the hemorrhages were recurrent, large masses of blood appearing in the vitreous from time to time. The eye that was enucleated I removed myself. I examined it microscopically and found the remains of hemorrhage into the vitreous in the form of fibrinous masses which had become somewhat changed by age. I have never found any satisfactory explanation of the etiology in these cases occurring in young individuals. Of course those

occurring from disease of the blood-vessels as in arteriosclerosis or in syphilitic affections, we know perfectly well about. They precede apoplexy, as Dr. Wescott has said, in not a few cases in apoplexy; but, regarding the cases that occur in the young we would like to have some further information.

DR. A. E. BULSON, JR., Fort Wayne: Dr. Woods undertook the study of this subject largely through suggestions from me. I have had during the past sixteen or eighteen years a number of cases of subhyaloid hemorrhage in the young, and they have been extremely puzzling to me and a source of a great deal of annoyance and uncertainty as to the outcome. The point which is of most importance is the etiology. When we can exclude kidney disease, arteriosclerosis, tuberculosis, syphilis and rheumatism we have very little left on which to found a diagnosis, and particularly the etiology. Some of the patients under my care have been where I could watch them for a period of years. Most of them have been in young farmers, and strange as it may seem, most of them have been in males. One man in particular was in the hospital for several weeks. During that time he was under constant observation by several of my confrères, including a very competent pathologist and bacteriologist and an internal medicine man. The man was given a tuberculin test, he had the Noguchi test, his blood was repeatedly and thoroughly examined, and we exhausted our means of arriving at a diagnosis. He was given potassium iodid internally, pilocarpin, salts, dionin both subconjunctivally and by local application, laxatives and cathartics, limited diet, and his blood-pressure was taken without discovering any blood-pressure which would lead us to suspect that increased pressure was responsible for the hemorrhage. During the time this man was under treatment and in the hospital he would have hemorrhages in the middle of the night while asleep; he would have them before breakfast; he had at least eight or ten in the hospital while under treatment, and it became a perplexing problem. The man returned home. He was carefully instructed concerning his diet and his duties; advised not to engage in any very laborious occupation. He soon discovered that it did not make any difference whether he pitched hay or rested under a shade tree, he had the hemorrhages just the same. The strange feature about this case was that when it cleared up he had 20/20 vision and there was not a single thing in that retina. Now in that case of retinal hemorrhage it seems to me there would be some evidence of it, and when we take into consideration that the fundus would be absolutely black and that we could not see the faintest red reflex for a period of two to three or four or six weeks, it certainly is strange that eventually it would clear up and he would have normal vision. This would occur again and again. This man has written me repeatedly. I intended to forward several of his letters to Dr. Woods. The letter would go something like this: "I haven't had a hemorrhage for three weeks. I can see to read and can see perfectly for distance. I hope it will continue, but the experience of the past would seem to indicate that I cannot hope for this vision very long." Perhaps in the course of a week I would get another letter which said: "Well, I have had another hemorrhage and I can't see anything." I exhausted all my resources and did not know what to do any more. It was with a view to determine the etiology that I asked Dr. Woods to take up the study. These cases were examined by me and my confrères, and we called to our aid competent internists, pathologists, etc. The only thing that I could find was a persistent, high indicanuria. I have not given the tuberculin test in all of them. I suspicion that possibly tuberculosis may play some part. The Noguchi has been given in several of them notwithstanding there was nothing to indicate that there was anything specific. In each instance it has been negative. To me these cases are a source of great interest. We did not try the injection of normal serum in that case.

DR. WILLIAM ZENTMAYER, Philadelphia: It seems to me not enough emphasis has been laid on the fact that there are two distinct varieties of cases here dealt with. It always appeared to me that recurrent hemorrhages and subhyaloid hemorrhages are different things. My experience is that the recurrent hemorrhages occur in young individuals, sometimes in one eye, more frequently in both, and that they lead to a peculiar proliferative inflammation which gives a bewildering ophthalmoscopic picture. We cannot with certainty locate the disk and see several layers of white, interlacing sheets. The subhyaloid hemorrhages occur in older persons; there is usually one, and in one eye. In the first class of cases the hemorrhage seems to come from the ciliary body. In the second class they most assuredly come from the retina. That has been proved. I cannot remember the authority; but in every case of the second variety the hemorrhage was traced to the retinal vessels. It came from any layer; not always just the anterior layer. It seems to me, therefore, that we have here to do with two distinct classes of cases.

DR. EDGAR S. THOMSON, New York: The late Dr, C. J. Kipp, who was a careful and accurate observer, told me he had seen one of these hemorrhages occur. It was in a patient over 50, and there were a few retinal hemorrhages. Dr. Kipp was examining him with the ophthalmoscope when he saw a retinal vessel burst like a garden hose, and the interior of the vitreous was flooded with blood immediately.

DR. WILLIAM F. MITTENDORF, New York: I should like to ask Dr. Woods whether or not he has thought of the hemorrhagic diathesis, in cases in which the etiology is obscure?

DR. HIRAM WOODS, Baltimore: Dr. Roberts speaks of detached retina. A detached retina is a result in quite a number of these cases that have been reported in the literature, and retinitis proliferans is another common result; the fibrosing result described by Dr. Zentmayer also. The detached retina brings up the source of the hemorrhage. So far as I can find out there is no very definite proof one way or the other as to just where it comes from. Fuchs in his textbook seems to lean toward the retinal vessels as the source of the hemorrhage. On the other hand other authorities take a different view. I thought I quoted Dr. Weeks correctly about the uveal origin, and de Schweinitz, Berry and others put the hemorrhage in the uveal tract. The fact that retinal detachment follows would rather look like the hemorrhage came from the surface beneath that. Now one of the cases I allude to here occurred in a woman who was perfectly healthy, 29 years old; but it absorbed. Dr. Mittendorf spoke about diaphoresis. She was given diaphoretics. The blood-pressure was 125 and nothing was found in that line. Under the diaphoresis and purgations a second hemorrhage occurred while the patient was in bed, as in Dr. Bulson's case. Later on she was given over to one of the best internists. He said to me, "That woman has bad teeth, and she is getting infection from some source. The teeth are all I can find and you had better have them attended to." There is no doubt that after a disgusting pyorrhea had been cured by the extraction of some necrotic teeth improvement went on steadily. I do not give that as the cause; what I am giving is the associated facts. This woman while in bed under diaphoretic treatment had three hemorrhages and when we discovered and treated the pyorrhea there was a steady improvement to normal vision. Whether that was the cause the future only can determine. Dr. Mittendorf speaks of one eye being usually affected. I think that is generally the case when we have any serious trouble of this kind. It is certainly the case with relapsing exudative choroiditis. A second attack will come in the same eye as a rule, and not in the other eye.

I want to express my approval of the view some have taken of these subconjunctival hemorrhages. I have in several cases found a little peripheral exudate that Dr. Woodruff spoke of; but de Schweinitz found that out some years ago. The necessity of recognizing subconjunctival hemorrhage is a matter of importance. Dr. Mittendorf's second question, as to the hemorrhagic diathesis may be answered by saying that I have not seen hemorrhages in other parts of the body; there was no leukemia or defective hemoglobin. They occurred in young people apparently in ideal health, except for the indicanuria and the pyorrhea, and, in one case, the positive tuberculin test. Dr. Rogers speaks of the predisposing and the exciting causes. In Dr. Thomson's case a young athlete who had been doing all kinds of stunts for years, once in a pole-vault had a subhyaloid hemorrhage. What made him have

V. 5
1911

the hemorrhage that time? It cleared up and he had no more. Some exciting cause does come in, but I am unable to tell what it is. I am only trying to find out the concomitant conditions that might act as causes, and I think the persistent turning up of tuberculosis and indicanuria, etc., we will find are possible causes in young persons. Of course, as Dr. Weeks says, we have got to differentiate these from the cases in older people with arteriosclerosis. Dr. Zentmayer thinks the subhyaloid hemorrhages do not recur. That has not been my experience. I have seen them recur in young persons. I think the vitreous hemorrhages are more common, but in this particular case of the young woman of 29 with the pyorrhea she had two recurrences of subhyaloid hemorrhage and only one definite large vitreous hemorrhage.

AN ESOPHAGEAL DILATOR AND AN ESOPHAGEAL SOUND

WILLIAM LERCHE, M.D.
ST. PAUL, MINN.

In a paper previously published,[1] I described a cutting operation for the cure of strictures of the esophagus, performed through the esophagoscope.

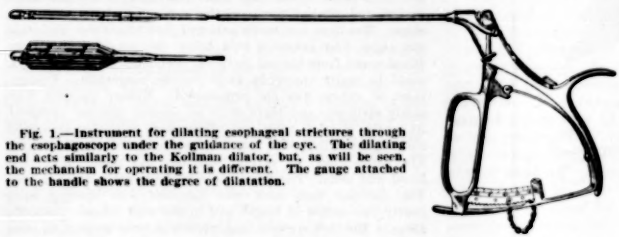


Fig. 1.—Instrument for dilating esophageal strictures through the esophagoscope under the guidance of the eye. The dilating end acts similarly to the Kollman dilator, but, as will be seen, the mechanism for operating it is different. The gauge attached to the handle shows the degree of dilatation.

Figure 1 shows an instrument which I have devised for the purpose of dilating the stricture through the esophagoscope, under the guidance of the eye, in the same sitting after the incisions have been made.

The circumference of the dilator when closed corresponds to 16 of the French scale, and its maximum expansion is 50 French, as indicated by the scale on the handle. A metal peg is inserted into holes on the scale-plate to limit the expansion to the extent desired. The dilator is used like a glove-stretcher to dilate the stricture gently by alternately expanding and relaxing the instrument, and changing its position now and then by rotation. By this method the stricture can be dilated rapidly in one sitting without removing the esophagoscope.

The esophageal sound (Fig. 2) consists of a flexible shaft of spiral steel wire which is covered by a rubber tube. To both ends of this shaft can be screwed olives of different sizes. The shaft and the olives are perforated throughout in the long diameter in order that the sound may be threaded on to a guide if desired. Figure 2 also shows a steel wire with an eye in one end used for pulling a silk thread guide through the sound. The cut shows the wire with the silk thread guide after it has been pulled through. The steel wire, when inserted into the sound, also serves the purpose of making the instrument more rigid if required.

1. Surg., Gynec. and Obst., October, 1910.

I have used this sound for several years, after first having tried the sound described by Jamison in 1825, and which of late has again come into vogue. In the latter the shaft is flexible at the end near the olive, but the olive only is perforated for the guide, and this at an angle to its long axis. I found that if a piano wire or a filiform whalebone bougie was used for a guide, this would easily become jammed in the olive, while if the guide runs through the whole length of the sound this difficulty is obviated.

412 Lowry Annex.

A METHOD OF FIXATION OF VEIN TO FACILITATE THE INTRODUCTION OF A NEEDLE FOR INTRAVENOUS INJECTIONS

J. J. WATSON, M.D.
COLUMBIA, S. C.

The difficulty, and sometimes impossibility, of introducing a suitable needle into a vein has been encountered by every one who has many times made the attempt, and the necessity of exposing the vein became unavoidable.

I have used the procedure described below a sufficient number of times to test its efficacy fully, seldom having failed to enter the vein on the first attempt.

TECHNIC

The arm is corded above the elbow if the vein is small or the subject fat, thereby rendering the vein prominent. The vein is then anchored by a medium-sized sewing-needle passed through the skin and upper quadrant of the vein at right angles to its axis; the hemostat or needle-holder used to insert the needle is taken off and clamped on the point side of the needle about one-fourth inch from the vein (Fig. 1).

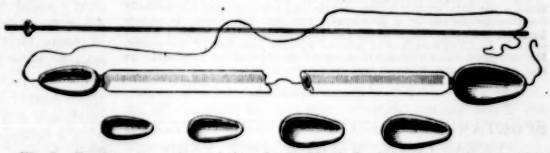


Fig. 2.—Esophageal sound, consisting of a flexible shaft of spiral steel wire covered by a rubber tube. Olives of different sizes may be screwed to each end; shaft and olives are perforated longitudinally so that the sound may be threaded on a guide if desired. A steel wire with an eye in one end, which is also shown, is used for pulling a silk thread guide through the sound. The wire may also be used for making the instrument more rigid.

The hemostat is gently lifted with the left hand, if the operator is right-handed, the upper wall of the vein being thereby elevated with the skin. The hollow needle is introduced into the vein almost parallel with the axis, with the right hand (Fig. 2).

Figure 3 shows a slightly exaggerated result of the ordinary effort of introducing the needle into the vein.

By my method no fluid will go into the tissues if the flow from the needle is stopped (after the air is expelled) just as it is plunged into the vein. There will be no bleeding if a piece of sterile gauze is pressed over the vein and held there for half a minute as the needle is withdrawn. Cover the three small punctures with collodion and the procedure is completed.

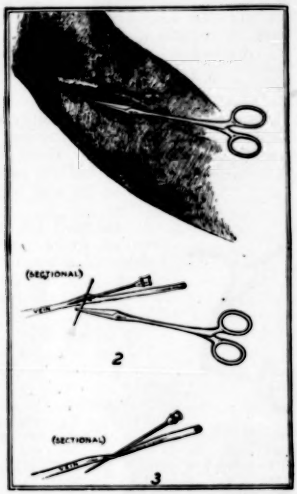
One is surprised at the comparative ease of execution of this procedure and the absence of discomfort to the

patient. I have had patients use a fan with the arm five minutes after the needle was removed and they subsequently experienced no inconvenience.

If it is desired to abstract blood, cord the arm and insert the needle, allow as much blood to flow as is desired, and then remove the cord, needles, etc.

I am now using this method for obtaining blood for the Wassermann reaction. I wish to acknowledge my indebtedness to Mr. Brantley Smith of the staff of the *Columbia State* for the drawings accompanying this article.

1312 Blanding Street.



Figs. 1, 2 and 3.—No. 1 shows the method of transfixing and raising the vein with a sewing-needle and holding it in the elevated position by means of a hemostat. The infusion needle is shown inserted into the vein beneath the transfixing needle. No. 2 shows more in detail the method of fixation and the insertion of the needle. No. 3 shows what frequently happens in attempting to insert the transfusion needle without first fixing the vein.

SPONTANEOUS RUPTURE OF THE SUPERIOR VENA CAVA WITHIN THE PERICARDIUM

E. E. SHERRARD, M.D., AND C. A. SMALLEY, M.D.
LOS ANGELES, CAL.

History.—The patient, a woman aged 53 was first seen on the evening of June 7, 1911. She had been combing her hair, preparatory to going out, when she suddenly became weak and faint, so much so that she went to bed and called a physician. When seen at 7:30 p. m. she was in a state of profound collapse; conscious, with face pale, and covered with cold perspiration. Her extremities were cold, and her legs had lost sensation and the power of motion; she could move her arms. Pupils responded to light and accommodation and were equal in size. The patient suffered from air hunger, and felt a pain in the left axillary line on a level with the nipple. Her temperature was 97.5; pulse 45, weak and thready. Heat was applied and strychnin and nitroglycerin administered.

At 12 o'clock, the same night, the extremities were warmer. The patient could move her right leg, and color had returned to her lips and ears. She still complained of air hunger. Pulse was 60, slightly stronger but intermittent.

June 8, 9 a. m., patient had slept quietly after ¼ grain morphin hypodermically. Color was still improved; temperature was 98; pulse was 85, irregular in volume and rhythm. The patient could move both legs, but she still had pain in precordial region extending to left midaxillary line. She also suffered from flatulency. Calomel was prescribed and strychnin continued. During the day her bowels moved and urine was voided, dark and diminished in quantity. At 8:30 p. m. the patient had taken nourishment. Pain was felt in same region but not severe. Pulse was 90, irregular and of fair volume.

June 9, 9 a. m., the patient had passed a fair night; general appearance was improved; the temperature was 98; pulse was 90 and irregular. Respiration was 20; the patient had a mild but continuous pain.

At 9:45 a. m. she suddenly expired, while the nurse was bathing her. The patient was the mother of three children, had not consulted a physician in twenty years, and up to the time she was stricken she had supposed her physical condition to be normal.

Necropsy.—The patient was a woman apparently sixty years of age, fairly well nourished, abdomen distended, and rigor mortis present. There was some free fluid in the abdominal cavity, and marked ptosis of the stomach and the transverse colon. The liver was much enlarged, and ptosis was such that the right lobe extended well below the crest of the ilium. Blood oozed from the cut sections. Veins of the portal system could be easily traced by their intense congestion. Enlargement of spleen was not pronounced. Kidney capsules were easily stripped, and there were no disease changes apparent. Appendix, ovaries, tubes and uterus were normally atrophied. Nothing abnormal was found in the lungs or pleural cavity. The pericardium, on careful opening, was found filled with blood and clots. The heart, *in situ*, appeared normal in size. The superior vena cava was ruptured, the opening being nearly two inches in length and in the wall farthest from the aorta. The left auricle and ventricle were normal in size, with no incompetency of mitral or semilunar valves. The tricuspid valves were normal, but were incompetent from dilatation of right auriculo-ventricular ring. No change in size of right auricle and ventricle. The aorta and pulmonary arteries were sclerosed but not markedly atheromatous.

We could discover no cause for this sudden rupture apart from the conditions already mentioned.

Probably the sclerosis in the pulmonary arteries was contributory, in that the lack of elasticity was enough to cause a retardation of the blood-current through the right heart; and the increased effort was sufficient to produce a dilatation of the right auriculoventricular ring with a consequent incompetency of the tricuspid valves. This, in turn, permitted congestion of the liver and the veins of the portal system; and after the inferior vena cava became engorged, the back pressure was too great for the superior vena cava and it gave away. The whole process leading up to the final disaster could have been only of recent origin, or certainly the woman would have had symptoms continued over a longer period of time; and the left heart would have shown more signs of hypertrophy. It is not unreasonable to suppose that the whole process apart from the sclerotic changes in the aorta and the pulmonary arteries, was limited to the forty hours' acute illness of the patient. Spontaneous rupture of the superior vena cava is so rare as to be almost unique.

After some research, we were unable to find but one reported case of spontaneous rupture of the vena cava within the pericardium, and we found no mention whatever of such a condition in the works on pathology consulted.

405 South Hill Street.

V. 5
1911

OBSERVATIONS ON TUBERCULOSIS IN THE SOUTHWEST *

E. S. BULLOCK, M.D.
IN COLLABORATION WITH
LEROY S. PETERS, M.D.
SILVER CITY, N. M.

In the fifteen years during which I may say I have lived constantly in an atmosphere of tuberculosis, and during which over two thousand cases have passed through my hands, I have reached certain conclusions as to the fundamental principles of treatment in this disease which I trust will prove of value. On the other hand, realizing as I do, that to be confined in a bit of a valley in the Rockies for many years with a colony of consumptives is not conducive to breadth of vision, it is my hope that in the discussion of my paper I may be able to correct any of my opinions which are wrong.

We must certainly grant that at this stage in the development of knowledge of tuberculosis we know exceedingly little about the disease. In fact, Koch's epochal elucidation of the etiology is a striking landmark along a way strewn with generalizations, theories, and loosely-applied scientific terms. Our forefathers in medicine, with their bleedings and sinapisms, were much more certain of their ground than we, who with each new discovery stand aghast at the realm of the unknown that stretches before us. A superficial observer, like George Bernard Shaw, dealing in half truths, as is his wont, overlooking either purposely or unconsciously our accomplishments in the alleviation of human distress, feels perfectly satisfied when he has designated us as conspirators and charlatans. Nevertheless, Shaw is largely justified in his criticism of our prevailing professional fault—treating theories as though they were demonstrations—and, as well, in his objection to our common, loose application of terms. With this criticism in mind I propose to abstain from everything which, if it is not empiric knowledge, may not at least be substantiated by anyone so minded.

I myself know of nothing so efficient as a destroyer of egotism as a close acquaintance with tuberculosis. When, year after year, human beings hold out their hands for help which cannot be given, when seemingly some of those most worthy of life die in spite of everything, and others recover apparently without much effort, it certainly not only brings home a keen appreciation of personal inefficiency, but as well a strong desire to confine oneself to a registration of facts and only facts in the discussion of this disease, permitting all theories to go by the board.

CLIMATE

I recovered from tuberculosis in the Rockies. My cure, after the lapse of years, may be said to be a real one, and not merely an arrest or relative recovery. Being human, it is natural to suppose that I started my work with a preconceived idea of the value of high, dry climates in the treatment of tuberculosis. When one recovers from so serious a disease as tuberculosis is likely to be, or, I may say, always is, it is bound to leave an almost indelible mental impression, with a tremendous bias in favor of the conditions under which one happens to recover. I can maintain, however, that I have tried conscientiously to remove my personal equation, as it were, from the consideration of the actual facts on which a final estimate of the value of high climates should be based. It is fortunate that at this time the evidence is practically all in, and has apparently crystallized in an opinion which to a very great extent, has become general throughout our profession and the people at large. The limited anti-climate school may spend much time in proclaiming that no benefit can be derived from climatic treatment that cannot be obtained in the home environment, but the reply is that of Dr. Alfred Stengel, who states that if he contracts tuberculosis he is going West, and that, I am sure, will be the answer of medical men generally, if under such conditions they can get or have the means to go there.

A commonly held opinion such as this is pretty likely to be true, at least pragmatically so, in the sense that the late Prof. William James would have employed that expression. In the future we may have something better to offer consumptives than high climates, but for the present at least we cannot do better than accept what seemed to be the consensus of opinion at the last International Congress on Tuberculosis, namely, that high climates unquestionably afford the best single weapon against the disease.

It is in anyone's power to prove this general statement of the value of high climates. As you know, the classification recommended by the National Society for the Study and Prevention of Tuberculosis has been quite generally adopted. In fact, in both Europe and America much the same scheme of classification is employed in sanatoria. This furnishes at least a relatively useful basis of comparison of the results achieved in the sanatorium treatment of tuberculosis, in spite of manifest shortcomings inherently dependent on our lack of knowledge of what really dictates differences in type in clinical tuberculosis. My own results, which correspond closely with those obtained by Dr. S. G. Bonney, of Denver, as recently communicated to me, and which, therefore, may be taken as a type of about what it is possible to accomplish in high climates, are briefly as follows: In terms of apparent recovery or cure the incipients furnish 83 per cent., the advanced cases 50 per cent., and the far-advanced cases 13 per cent. These results are achieved in an average sanatorium residence of a little more than nine months, and could undoubtedly be improved if we were granted a perfect control over our patients, which in the light of the limitations placed on remaining under treatment a sufficient length of time by both lack of money and human weakness, it is impossible to obtain. As all institutions, however, struggle against much the same conditions and disadvantages in the respect named, comparisons between them will be none the less fair.

Taking these statistics as representative of about what we can expect to accomplish in the sanatorium management of consumptives with our present armamentarium, and using them as a standard of comparison, what can be discovered? Beginning with institutions located at sea-level in this country and in Europe the results will be found to improve with every thousand feet of altitude obtained up to six or seven thousand feet, the latter figure being the extreme limit of sanatorium location. While a personal equation doubtless enters into any scheme of classification yet devised and while there are considerable differences between institutions as to type of human being received, yet as a deduction from the available statistical evidence the conclusion follows that the best results are obtained in high altitudes.

At the meeting of the International Conference on Tuberculosis held at Philadelphia in 1908, it was my privilege to hear Dr. Williams, of London, speak on this subject. His was the paper of the evening, and in the

* Read in the Section on Laryngology, Otology and Rhinology of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

audience were gathered most of the men prominent in this country as opponents of climatic treatment. One cannot forget the astonishment with which they received Professor Williams' paper, in which he advanced his carefully kept case-records to show that in a lifetime largely devoted to the treatment of consumption the best results had been obtained in those instances in which the patient had gone to the Alps. Among European phthisiotherapists it is common practice to give the patient a chance in the Alps if it is practicable to do so. And, as Dr. Williams has said, how much easier and more pleasant high altitude treatment may be in a country where the vast interior plateau is one grand sanatorium with every possible variety of climate as regards temperature exemplified! I am no special pleader for any particular locality, but wish to embrace in my recommendation all that high, dry portion of the western United States which lies between the northern boundary of Colorado and the Mexican line. A curious obsession is presented by the average climatologist who imagines that the particular spot where he lives and works must necessarily have just a little the better of any other place.

It is certainly most important that a locality be chosen which presents a good all-year-round climate, for it cannot but be most disadvantageous to a consumptive who is doing well, and accustomed to his surroundings and doctor, to be forced on account of a hot and prostrating summer to change his location.

It has been advanced as an argument against climate that at one time or another all sorts of places from Florida to California had been advocated as resorts for consumptives, and that, after a time, each in turn had given way to the next. This is not an argument for or against climate, but the strongest possible evidence in favor of a change in environment, which, as we all know, is efficient for a time, at least, to a remarkable degree, in tuberculosis. In fact, there is no known metabolic stimulant the equal of simple change in scene and surroundings.

The real work, the most important work of the Southwest, is to-day done by consumptives who are cured or whose disease is arrested, and this in the face of extensive and often vast pulmonary destruction. We, who live there, have no difficulty in appreciating what these people mean to the country, and what the country means to them. If others could only be brought to this appreciation there would be no agitation against climatic treatment. I never had a phthisiotherapist visit my institution and go over the cases who was not astonished at the accomplishments of high-altitude treatment.

Utilizing, therefore, the gathered experience of centuries, from the Father of Medicine to our own time, the conclusion is justifiable that high altitude climates are most likely to prove permanently helpful to consumptives. This is the best sort of empiric knowledge, and I do not think that it should require any further elaboration at my hands or those of any other man.

The application of this knowledge for the benefit of the unfortunate individual presenting himself for counsel as to what to do and where to go, is, I regret to say, a very difficult matter, the trouble being that not over one consumptive in a hundred can afford to go away for his health. This, I maintain, comprises the only argument against climate worth listening to, and, we must all agree, it is a very serious objection, and compels the use of our most valuable therapeutic measure in but a very limited number of cases. Dr. J. Solis-Cohen, of Philadelphia, who has been advising consumptives for fifty years, employs a method of dealing with this problem which I believe is the only one fair to patient, home physician, locality chosen as the field of battle, as well as the physician or institution to which the patient may be sent. On confirmation of the diagnosis he states the case to the patient in approximately these words: "What I advise you to do will depend on your financial resources. In plain language, can you command twelve hundred dollars during the coming year without impoverishing either yourself or your family?" If the reply is "no," then the project of going to a distant climate is not mentioned, and if, on the contrary it is "yes," then he recommends the Rocky Mountain region, and specifically refers his patient to a physician known and trusted by him or to an institution standing equally high in his estimation. By this method the patient has his best chance, if able to afford it, and if not, the lure of a better chance than he would have at home is not held out to him. He is not sent where he can spend but a few months, a wholly inadequate period for testing out a case of tuberculosis, and then compelled, sorely disappointed, to return home; he is not sent where his family will be placed in jeopardy by the expense of his trip; he is not sent if it is probable that he will be still unable to work at the end of a year, and become penniless in a strange land. If it could only be appreciated how often the indigent consumptive comes to the Southwest—and indeed, a sadder figure can hardly be conceived—it seems certain that very great care would be taken in preparing him for his long sojourn in a distant region, to face undismayed a prospect of at least twelve months away from home. All possible good obtainable from treatment in a high altitude will likely be more than counterbalanced by financial worry. One hundred dollars per month is none too much for the requirements of an invalid in a strange land. It seems certain to me that three out of every five patients sent west are very inadequately supplied with money, or perhaps it should be said, who go west, for surely our profession is not responsible for all of them.

Finally, by this plan the home doctor is fair to the physician or institution to which the patient is referred. He has assured, as far as he is able, time enough to try out the case. This is a very important matter indeed. Certainly we do not expect to obtain a result in an average case of tuberculosis in a period of four or six months in any climate. There is no disease in which there is a prospect of recovery in which time is a more important element. After years of this work I feel perfectly sure of my ground in stating that twelve months is a good average for an incipient case; two years in an advanced case, and three in far-advanced cases, and in such, if relative recovery occurs, probably the rest of life in the high altitude zone.

In the West years ago we had many more incipient cases than we now have; then the home treatment fad came in, and now, let me say as emphatically as I am able, that our successes are largely derived from home-treatment failures. We get them when the patient, the home doctor or the family have become scared. Over 60 per cent. of the patients treated in my institution are in the far-advanced class. If able to come to us when far advanced, surely they might have been sent in the beginning, when the prospect of cure was 83 per cent., as well as in a stage when the probability of clinical cure is reduced to 13 per cent. I was formerly very proud of the number of apparent recoveries I could turn out, but latterly from the high percentage of advanced and far-advanced cases sent to me, I have been forced from the

V. 5
1911

exigencies of the situation to turn my attention to the conservation of human life, and we high altitude workers are very thankful that there is a place to which this class of invalids can turn hopefully, and where, let me emphasize, they are welcome. I have no hesitation in saying that if once more a consumptive as I was fifteen years ago, I would rather take my chance in the Rocky Mountains with a good home and three good meals a day than in the best equipped, most scientifically conducted institution in the world at sea-level.

Why high altitude climates are helpful in tuberculosis we do not know. Webb, of Colorado Springs, has done much work to show that the large mononuclear leukocytes are increased in a high altitude, and ascribes value to this phenomenon. Dr. L. S. Peters, my associate, has shown that an increase in blood-pressure follows continued residence in such a place. Still others have maintained an increase in the erythrocyte content of the blood, as well as changes in conformation of the chest, respiratory changes, etc. Although suggestive, none of these theories singly or combined tell us definitely why more consumptives recover in a high altitude. Instead of indulging in loose attempts at scientific explanation, we may better say that a climate which tends to keep healthy people healthy, and which furnishes a very low death-rate, is seemingly a good place for consumptives to resort to and receive treatment. And now, since we have found that exposure to all the elements, no matter how unpleasant it may be, is not necessarily a part of fresh-air treatment, it is infinitely more agreeable to the patient to take the cure where the temperature does not drop to 20 or 30 degrees below zero in winter, or where he must endure a summer of prostrating humidity.

There is no known means of saying beforehand that in any given case the patient will or will not be benefited by residence in a high, dry climate. I know of no special type of tuberculosis in which high-altitude treatment is contra-indicated *per se*. Certainly no one should be sent, even if able to afford the change, in whom the mental attitude is positively against going away. I have seen each and every variety of consumptive recover, and, as well, I have seen failure in each and every class. I have a profound conviction, however, based on the fact that in every instance in which a patient whose case was progressive went home of his own accord, or changed to a low climate of his own volition, as well as those advised to go, he is either dead or will be dead in a short time; that if recovery is impossible under proper conditions in a high climate, for all practical purposes it cannot occur anywhere. I recognize but three indications for sending a patient to a lower altitude, namely, cyanosis, which is chronic and independent of cold, a high grade of emphysema causing life in a high altitude to be intolerable, and broken compensation in heart lesions. In hopelessly far-advanced fever cases the patient will always be more comfortable in a low altitude, and should never have been sent to a high or distant climate in the first place.

The sanatorium owes its usefulness in the scheme of combating tuberculosis to a great many factors, principal among which is that it offers facilities for the treatment of comparatively large numbers of a class of invalids not desired anywhere else. Especially is this so of the unfortunates with the marks of the disease on their persons. All over Europe and America tremendous pressure is now brought on consumptives to submit to institutional treatment. Though to an extent this is the outgrowth of modern phthisiophobia it is the best possible thing for the consumptive. It places him at once under a scientific, or rather, let us be honest and say, a pseudoscientific régime, where everything that can be done will be done, and not much done that ought not to be done; in a place where he is wanted for his own sake, among others who, similarly afflicted, are congenial; where the atmosphere is impregnated with the spirit of getting well; where he receives an education in tuberculosis of value, not only to himself, but to others; where it is possible for him to see his physician when he needs him, and not be wasting precious time in some doctor's office awaiting his turn; where, if necessary, his throat may be treated without his going miles for that inefficient two or three times a week application; where he can be fed what he requires with the least effort on his part; where if he receives tuberculin its effects may be carefully observed; and last, and, I am tempted to say, most important of all, where he can be in daily touch with a doctor who loves his work and his people, and who, the patient feels, can do as much for him as any other man, and who, he also appreciates, will be absolutely fair with him, who will not feed him on false hope, but who will be physician, brother, and, in fact, a whole family to him. Sanatorium physicians who can inspire and maintain the spirit of getting well, and who realize that sometimes there is nothing between the patient and death but the right word at the right time, are born, not made, and strange to say, that they may have the proper point of view as well as patient sympathy, it is almost essential that they should have had the disease in their own persons. For one man to do the work the sanatorium physician often does, would be impossible if it were not for the fact that his patients are conveniently located in one place.

These, I think, are the reasons for the existence of the tuberculosis sanatorium as we know it to-day, and all will agree, I believe, that they are sufficiently important to justify our whole-hearted support of the sanatorium movement in this country.

The peculiarly personal relation of the sanatorium physician to his work is one reason why such institutions should be kept relatively small and well within the range of what one man can do well. We are all glad to see the fruition of the movement for the establishment of state institutions for tuberculosis, but, it seems to me, it would have been much better to establish several small ones in each state than one great one. Evolution will, I have no doubt, bring this about, but at a great expenditure of time, effort and money.

TUBERCULIN

I approach the subject of tuberculin with much hesitation; for so little is known about it. You will remember, I have no doubt, Trudeau's conservative statement of the value of tuberculin which appeared in the *American Journal of the Medical Sciences* in 1907. It marked the renaissance of tuberculin in this country. When I reread that carefully prepared statement and then turn to the enthusiastic writings of Bandelier and Roepke I stand aghast at the vast differences in men when treating the same subject, as well as the apparently clear demonstration of the lack of real knowledge of tuberculin. I feel definitely sure that at least some of the repute of the use of tuberculin as a sanatorium procedure is due to the fact that without a routine measure such as the administration of tuberculin affords patients cannot be kept long enough under institutional management to accomplish much of anything; or, to state it differently, it is easier to keep them working for cure if something definite and tangible is being done for them. Tuberculin, therefore, with its pseudoscientific

reputation, is an almost ideal weapon against human weakness and restlessness. It seems to me that if tuberculin employed with such care as to be harmless did no more than this it would be worth something—simply as the faithful ally of the sanatorium physician, whose measure of accomplishment is often largely that of keeping a patient faithfully working long enough to try out the case.

It should be almost needless to state, however, that no honest man could use tuberculin if not convinced of its usefulness, and that most of us are. Exactly when and how to apply it is quite another question and one which no one can answer definitely. I cannot show statistically that my results in terms of cure are much better since I have been using tuberculin than previously when I did not use it, though, in terms of those still living the results are better, as found by Trudeau. On its face value this is a good reason for faith in tuberculin, although in this better post-discharge mortality under tuberculin we must certainly consider the possibility of its being accounted for by natural selection—in other words, in the most favorable cases tuberculin is best tolerated, and this toleration might be taken as a measure of resistance rather than that the better prognosis is due to the administration of tuberculin. That this is absolutely true of those cases in which tuberculin is accepted as though it were water, I have no doubt, excepting, of course, very advanced cases in which reaction power has been lost.

An excellent reason for faith in tuberculin is this: We are all familiar with the permanence of type in tuberculosis; that afebrile cases tend to continue afebrile throughout the course of the disease, and *per contra*, febrile cases continue febrile in the same manner. It is certain that with tuberculin we can change more cases from the febrile to the afebrile class than without it. It is also certain that, regardless of class, we not infrequently see sudden clinical cure or improvement follow reactions. Tuberculosis is usually chronic in its progression as in its retrogression; nothing, as a rule, happens suddenly, least of all improvement or cure, and when such events follow reactions, then the only sane deduction is that the tuberculin accounts for it. A few years ago I stopped the use of tuberculin in my work—to enable me to recover my standards and be more certain of what I was doing. I did not use it for six months and it certainly seemed to me that without it the course of events in my institution was not so smooth as before; that the manifestations of the disease were more tumultuous; there were more eruptions and flareups. You will remember that Trudeau maintains the same thing.

In which cases to abstain altogether from the use of tuberculin, knowing beforehand that it will not be tolerated, and in which it must be used if recovery is to occur—these are questions which no one can answer. The opsonic method, heralded as at least a partial reply to this difficult question, has gone into the limbo of widely proclaimed and soon forgotten discoveries in medicine. We have left only the clinical method, which after all, is but careful experimentation in each and every instance in which tuberculin is applied.

The use of tuberculin in my hands has been an evolution. I began using it only in cases in which recovery was reasonably sure without it, and have gradually extended its use, as I have found that with sufficient care it may be given to anyone, or its futility demonstrated in any individual case with absolutely no danger. It must be remembered that in sanatorium work we have only a limited time in which to apply our measures for the relief of our patients; to be exact, in my work there is an average of nine months, and also, it should be remembered, in all probability the patient will not have another chance. What is accomplished must be performed in these all too few months. I admit that, granted all the time necessary, I would first demonstrate the possibility of improvement or cure without tuberculin in practically each and every case before resorting to its use. With, however, the limited time available in mind, and knowing that tuberculin can be given safely to anyone, or that its use may be stopped without subsequent damage to the patient when the indications for so doing are manifested, and that it is wholly necessary in some cases which we have no means of selecting beforehand, I feel it my duty to do as much good with it as I can in the limited time which the exigencies of the work and human nature will grant.

All I know of the use of tuberculin I have learned in the school of experience. First, I had to discover that with the newer and more active preparations no dose larger than 1/1,000,000 mg. is absolutely safe as a beginning dose; that occasionally marked reactions would be witnessed in afebrile cases with either the B. E. or B. F. in so small a dose as 8/1,000,000 mg. In such instances it proves necessary to start with 1/10,000,000 mg. Now, except in very incipient afebrile cases I never start with a larger dose than that first named, and in the best type of cases with a dose no larger than 1/100,000 mg.

The bouillon filtrate I use twice a week, unless it seems wise, as experience is gained with the individual, to lengthen the interval, and the doses of Bacillen Emulsion are spaced six days apart. As practically everyone is familiar with the clinical method of gradual increase of dose it is not necessary to discuss it at length. In some ways my practice differs widely from that in common use, as will be referred to later. At the slightest hint gained from daily careful observation of symptomatology, the dose is either reduced or repeated. The most valuable symptoms of supertuberculinization are tired feeling, increase of cough or expectoration, boneache, and, as a rule lastly, rise of temperature. In the presence of these symptoms the rule must be either to repeat or reduce the dose, and to repeat at the reduced dose or repeated dose until it seems perfectly safe to continue, doing so in fractions if it seems wise. We should always keep in mind the fact that there is no such thing as a course of tuberculin, and that almost any dose attained may prove to be the most valuable one for our patient. In fact it is my conviction that the dose which is just short of producing manifestations of reaction is the one most likely to be efficient, and that if we had a safe and reliable method of determining this dose beforehand much time might be saved. It must not be forgotten that the practically indefinite repetition of the seemingly effective dose may be all that is required.

The afebrile cases, though a fairly large proportion of them will accept each and every increase of dose without symptoms, are those in which it is usually impossible for the clinician to be sure that his tuberculin has accomplished anything. Experience has shown clearly that when tuberculin is received without symptoms it is surely harmless, but that in such cases it actually does good is problematic. The cases without fever are those in which we recognize the best natural resistance to the disease, or those in which to a great extent there is a natural toxic immunity. It is reasonable that such patients should accept the toxin or allied toxin to which

V. 5
1911

they have already proved their resistance. We must admit that natural tuberculosis toxemia is at least related to tuberculin poisoning. It is also, it seems to me, reasonable to expect less benefit from the use of tuberculin in such cases than in those in which it is used with at least some difficulty.

Recognizing the brilliant results which occasionally follow reactions, it may be asked, why not raise the dose progressively and sufficiently rapidly to accomplish the reaction? The answer is plain: An occasional and slight reaction is certainly not to be feared; it may do good, and in my experience is not harmful. But the reaction is beyond our control when once induced; it is always a sign of supertuberculinization, and when violent or often repeated may result in positive damage, by breaking or impairing the degree of natural toxic resistance the patient may possess, or even causing rapid extension of the lesion. This we all know from the bitter experience of twenty years ago.

It is unquestionably rational to improve toxic resistance by tuberculin administration, but when tuberculin hypersusceptibility is encountered there remains but one thing to do: stop the tuberculin at once and probably for good. To continue on the appearance of symptoms denoting hypersusceptibility as shown by reaction phenomena on reduced dosage is a crime. I have had some experience of a retrial in such cases after a year or two, and such as it is it surely indicates that the ability to neutralize tuberculin has been permanently impaired. Though not fearing slight reactions—and that is about all the careful man will ever get—I do not feel that the present state of our knowledge justifies their deliberate cultivation. Occasionally most brilliant results have followed violent reactions, an instance of which came under my observation several years ago, when a patient received 600 mg. by mistake for 60. The resulting reaction was tremendous, and it was thought the patient might die. He recovered rapidly, however, and has never had any symptoms of tuberculosis since, and now four years have passed.

In a speciality full of uncertainties and surprises, like phthisiotherapy, nothing can be surer than the prognosis based on tuberculin immunity. We absolutely know that, given one hundred cases in which each dose of tuberculin is accepted as though it were water, and one hundred in which it is given with difficulty, or in which the impossibility of its administration is demonstrated, the natural expectation of life is vastly better in the first-named class. Practically this amounts to a demonstration of the close relationship that exists between tuberculin and the toxemia of tuberculosis. In this connection it must be granted that I have not in mind those far-advanced and hopeless cases in which reaction ability is exhausted, and in which a seeming tuberculin immunity is an expression of grave prognosis.

It is in those cases of the afebrile class in which at least some difficulty of administration is encountered that we are justified in interpreting our good results in terms of tuberculin achievement, and it is in such that the principle of repeating or lowering the dose must be most religiously followed. The tuberculin immunizator should have ever in mind the rule to avoid sins of commission, and if he cannot he does best to let this powerful substance alone.

I have now to speak of what is to me the most interesting class of tuberculous invalids in their relation to tuberculin. I refer to those with an average daily maximum temperature between 99 and 100 F. My method of using tuberculin in this class is a product of my own experience. We all recognize that the tendency of these cases with a chronic febrility of the type named, and in which no result is obtained from rest, is not only to continue with the same temperature curve day after day, but to present the signs of slow progression. Tuberculin enables us to save at least a fair proportion of these otherwise doomed patients, and in them my procedure is radically different from that employed in any other class, and on its face somewhat contradictory, I must admit. Starting with a known safe dose it is slowly increased until, should it fortunately occur, there is a slight drop in temperature on the day following the dose or on the same day. Should such a drop occur, even though it be but a fraction of a degree, the dose is held at the point reached until the temperature again rises, when it is not reduced, but raised, following the temperature up, as it were, and again repeated as before until little by little the temperature is forced to normal. The dose effective in obtaining the normal temperature is repeated practically indefinitely, or after a time, tuberculin resistance having been well cultivated, it is cautiously raised, sometimes to the limit of a 1,000 mg. These patients with the slight daily rise of temperature are, we may say, on the fence as regards progression or retrogression of their disease, with the course usually in favor of slow progression, and in them tuberculin finds its most positively useful field of application. In such cases it is unquestionably often the means of carrying to safety at least a fair proportion of the patients who would otherwise join the ranks of those discharged unimproved—progressive. We have in such instances deliberately cultivated what they did not have before; namely, resistance to tuberculosis, and it is certainly a grand accomplishment.

I mention only to condemn in plain and unequivocal terms the use of tuberculin in high fever cases, those in which the average daily maximum temperature is over 100 F., and in which the patient is already supertuberculinized or overwhelmed with some allied toxin. I have tried it out faithfully, and though, in such cases, each increase of dose may be accepted without additional symptoms, it has never been successful in my experience. These are the cases in which we suppose there is or may be a symbiosis of other organisms to which some, at least, of the fever may be due. Tuberculin, then, we might reasonably expect to be totally ineffective, and even if we grant that other organisms play but an insignificant rôle in fever production, and that the patient is simply overwhelmed with tuberculous toxemia, still we cannot expect more of the same poison or allied poison to prove beneficial. We abstain from the use of tuberculin in such cases for the same reason that we discontinue it when hypersusceptibility is induced. These are the cases in which the patient most needs our assistance, and in which we find ourselves least able to give it.

OTHER THERAPEUTIC MEASURES

Vaccine.—In the patients with persistent and severe febrility just referred to I have made a faithful and persevering trial of homologous vaccines during the past two years. I have seen just enough seemingly good results to encourage continued effort with them, but by no means to enable me either to endorse or to condemn their use.

Rest and Exercise.—Though the pulmonary or other lesions in tuberculosis may be important, it is certainly a fact that the disease is manifested to us as a chronic intoxication, and the question of rest and exercise is

absolutely settled in my opinion by the presence or absence of the signs of this intoxication. As long as by elevation of pulse and temperature, as well as emaciation, we know that the patient is not neutralizing the quantity of poison elaborated, then it becomes perfectly plain that the balance must be in favor of rest, and whether complete or relative, must be determined individually by the degree of intoxication present. As soon as these symptoms are in abeyance, then graded exercises, for the purpose of restoring the muscular system, as well as for the effect on metabolism, must be instituted, with accompanying careful observation of pulse and temperature. This method in my hands has yielded excellent results, and I see no reason at present for its abandonment in favor of the theory of auto-inoculation by exercise.

Citrate of Iron in Anemia.—With the indefinite and piecemeal knowledge that still characterizes medicine, it is but seldom that a physician finds himself in a position of being able to endorse a therapeutic measure in a whole-hearted manner. This I find myself able to do in the hypodermic administration of citrate of iron in the common secondary anemia of tuberculosis. A residence in a high altitude has an undoubted influence for good in secondary anemias, but now, with the hypodermic use of citrate of iron, we do not have to await natural restoration of the hemoglobin content in this manifestation of tuberculous toxemia, but may, with almost mathematical precision and in practically every case cause the hemoglobin reading to be normal in from twenty to forty days. My favorite prescription for this purpose is as follows: Citrate of iron, 0.10; sodium glycerophosphate, 0.50; sodium metarsenate, 0.10; strychnin, 0.001. In another place my associate, Dr. Peters, has fully reported our use of iron for this purpose, and it is not necessary to go farther into the subject here.

Diet.—After having tried every sort of dietetic scheme so far recommended in tuberculosis, I am positively of the opinion that the only important dietetic principle is that of sufficient plain and wholesome food. There has long been a strong prejudice among phthisiotherapists in favor of an excess of proteids in the diet of consumptives. During recent years, following the lead of Crittenden and Fisher of Yale, and the splendid work they have done in the department of dietetics, I have been slowly swinging away from the excessive proteid diet, and so far, I am sure, without injury to the work. What is meant by forced feeding, and the only sense in which forced feeding can be absolved from the epithet "outrage on the patient", is simply enough food in the individual case to maintain losses and, if possible, restore the normal weight. There is absolutely nothing but indigestion and auto-intoxication to result from the real forced feeding, the stuffing process, such as was practiced ten or fifteen years ago. I have never been able to prove to my own satisfaction that altering the constituents of the diet, except to meet individual digestive indications, has any practical application in tuberculosis. As soon as toxemia has been removed, then the natural appetite becomes the best possible dietetic guide.

Formaldehyd in Laryngeal Tuberculosis.—In closing I would like to call attention once more to my method of applying formaldehyd in laryngeal tuberculosis. I recognize, of course, that the actual cautery as well as direct surgical intervention, as in removal of the epiglottis, have a place in the management of this often distressing complication. Taking it by and large, the twice daily direct application of a dilution of liquor formaldehydi solution in both the ulcerative and infiltrated types of laryngeal tuberculosis has yielded such excellent results in my hands that I am inclined to urge its use in all institutions for tuberculosis. This method is very tedious and really practicable only in institutions where the patient is at all times available. The method and its results I reported in full to the last International Congress on Tuberculosis. It has enabled me to achieve 35 per cent. of recoveries in the larynx, and 18 per cent. of recoveries, taking the larynx and other lesions together. Realizing that tuberculosis of the larynx is, as a rule, a complication of otherwise bad cases, especially in its severe ulcerative manifestations, the results indicate to me that the method has much to recommend it.

ABSTRACT OF DISCUSSION

DR. A. H. ANDREWS, Chicago: I wish to mention certain points in the paper in order to emphasize them. First, we should not underestimate the value of sanitarium training for these patients. This is of value, regardless of whether or not they recover. It trains them in their own sanitation, and it makes those around them, with whom they must come in contact, less liable to contract the disease. I live not very far from one of these open-air sanitariums and I come in contact with patients who have been there. Some of them are apparently well and some of them are not well and will not get well, but they are all thoroughly drilled in their own sanitation. Next, I would emphasize the importance of personal contact with some one who has faith in the future for these patients. You have to imbue them with your own courage, in order that many of them may get well. The psychic side is important. Many who cannot get well are very optimistic, and many, who otherwise would not get well, may be helped by the optimism of the physician. It is fortunate when the man at the head of the sanitarium is optimistic and can come into direct, close personal contact with the patients.

DR. E. R. CARPENTER, El Paso, Tex.: It is too bad that Dr. Bullock could not take up in his paper his work on laryngeal tuberculosis. Having lived in the same community I have had an opportunity to observe some of his patients before and after treatment, and it is marvelous what may be accomplished. I have seen cases of infiltration and ulceration, in which recovery seemed impossible, and yet in some 35 per cent of these patients recovery takes place. No one in private office work can obtain such good results in this class of work. There are a good many of his patients whom possibly a more expert laryngologist could cure more quickly, but there are many things we can do in the institutional treatment of these patients that are impracticable in private office practice.

DR. SHERMAN VOORHEES, Elmira, N. Y.: I was somewhat disappointed that the reader of the paper did not say more regarding laryngeal tuberculosis. Formerly I felt that I must send these patients to the southwest high and dry altitude, where I have had many excellent recoveries. But my experience has been that many of these patients cannot return East and maintain good health. On returning, after pronounced cured in the Southwest, they would have a return of the trouble. In the last few years I have been sending these patients to the Adirondacks, and those that have recovered have remained well after returning home. So I think we should take into consideration the surroundings of these patients. In Elmira we have found that at an elevation of 1,000 or 1,200 feet, under proper regime, our patients do as well as at higher altitudes, whether the Adirondacks, the Catskills or the mountains of the Southwest. A patient sent to a resort near his residence, often does better than when sent to the Southwest, where they are under different conditions. Some of my patients have objected to the everlasting sunshine to which they have not been accustomed. It seems to me that possibly better results are secured by the use of tuberculin and the regime in a small sanitarium.

DR. THOMPSON B. WRIGHT, Pasadena: I want first to endorse what Dr. Bullock has said about sanitarium treat-

ment. I think all of us will agree that we cannot accomplish in private practice what can be accomplished in a sanitarium. I was very much impressed by what he said about tuberculin, and feel that his conservative methods should be heartily endorsed. His experience was especially interesting in the giving of tuberculin in larger doses than the usual ones, in febrile cases under certain circumstances. I have had a similar experience in a few cases and have noted that results may be governed somewhat by the initial drop of temperature of which he speaks. I want to congratulate Dr. Bullock on the excellent results he has achieved, considering the handicap of the bad climate he has been working in. It seems to me they are wonderful. I formerly practiced in Ohio and sent patients to the Alleghenies, the Adirondacks, to South Carolina, to Southern California and, also, to Denver.

A large percentage of those sent to the Alleghenies and to California recovered; but those sent to Denver all died promptly. I have been impressed by the statement, made by a prominent Denver physician (Dr. Holden), that, in examining patients sent to him from the East, often a larger lung area will be found involved than was reported by the men sending them. That would indicate an increased hyperemic area induced by the stimulation of the higher altitude. This may be a good thing. It is what we get in tuberculin reactions, and frequently we get secondary good results from these reactions. But, if the patient does not recover quickly from the hyperemia, he may die very promptly, or remain permanently worse. And this is an element to be considered in sending patients to a high altitude, especially when they have been accustomed to elevations near the sea level. It is a risk for them to go at once to an altitude of perhaps 5,000 to 6,000 feet.

I was much impressed by what Dr. John C. King of Banning, Cal., told me, namely, that he had never seen a patient with tuberculosis complicated by organic heart disease recover at Banning, where the elevation is 2,300 feet. If that is true at Banning, how much more must it be true at higher elevations.

Dr. Bullock has had remarkable results; but, if you compare them with the results obtained by Von Ruck at Asheville, by Brown and Baldwin at Saranac and by Pottenger at Monrovia, whose results are as good as his own, we are forced to the conclusion that climate is not the most important factor in the treatment of tuberculosis; but that more depends on the man who is in control of the sanitarium and carrying out the treatment than on the elevation.

DR. G. B. WEBB, Colorado Springs: For many years I have been trying to find out a scientific explanation for the possible advantages of climate and altitude in tuberculosis. It is well known that there is usually some scientific basis for the survival of a time-honored remedy, and, as Dr. Bullock remarked, people have been using altitude as a therapeutic measure for some 2,000 years. For an indefinite period our good mothers have used the hot mustard foot bath in the treatment of their children for colds. Science has explained that this measure produces a beneficial leukocytosis. When our mothers have poulticed abscesses and boils, science has revealed that they have thereby produced an increased flow of blood and opsonin to the diseased areas. It was my good fortune a few years ago to discover, together with Dr. W. W. Williams, that one effect of altitude is to increase the lymphocytes in the circulating blood. A large amount of recent scientific work has pointed to the lymphocytes as the active warriors against the tubercle bacillus. The tubercle bacilli contains about 30 per cent. by weight of wax resembling beeswax. Wax is difficult for our body cells to digest, but the lymphocyte is easily able to do so. At an altitude of 6,000 feet these lymphocytes are increased 40 per cent, and I am inclined to believe that this factor is probably of great importance in the cure of tuberculosis at altitudes and in part explains the high degree of immunity to tuberculosis which residents at these altitudes seem to possess.

DR. B. R. SHURLY, Detroit, Mich.: It has been my privilege and pleasure, for some twelve or fifteen years to send patients with tuberculosis to the Southwest, and during that period Dr. Bullock has had between seventy-five and a hundred of these patients. I have watched these patients from year to year to observe what the effect has been in the climatic treatment in the Southwest, and to carefully observe those that have returned to our own climate of Michigan, which is a particularly moist and bad climate for this disease. And I have tried, if possible, to make some deductions, from which I might, myself, draw some conclusions and some confirmation of the theories in regard to climatic treatment. Many of them are patients that have come under observation because of nose and throat symptoms, with the diagnosis of a pulmonary lesion as a secondary matter. And I may state, by the way, that I have never seen laryngeal tuberculosis unattended by a pulmonary lesion. There may be such cases, but it has not been my privilege to see them. This may be because the cases that come to a specialist, come after the difficulty has existed for some months. At any rate, I have not found cases of laryngeal tuberculosis without some pulmonary lesion. Therefore, the treatment of laryngeal tuberculosis must include the treatment of pulmonary tuberculosis in the vast majority of cases. It is a compound problem. In sending these patients away from home, we have a great responsibility. Many of them are sent uselessly, as we know, and it is essential that we should have some definite classification of the patients we will send away to the Southwest and those we will keep at home. The first consideration is the matter of finances. In some of the advanced cases, patients who are hopeless wrecks, with a few months, perhaps, of life, it is absolutely wrong even to mention the great value of sending cases to the Southwest—something of value that is impossible to them. Unless they can have at least $1,000 and go under proper medical supervision, it is certainly wrong for us to send them away. We can do much better with these patients at home. The question of early diagnosis, then, is the one which should concern us more than any other. And I think we should, as far as possible, constitute ourselves missionaries in our own home circles to impress the importance of the early diagnosis in tuberculosis. All of us who treat throat patients, often see the picture in the larynx, the peculiar anemic, white larynx, that should arouse the suspicion that perhaps something is wrong further down the respiratory tract. A crusade along this line will be very valuable aid to those who develop this dreadful disease.

DR. ALBERT H. SCHERMANN, Flagstaff, Ariz.: It is hard to say why high altitudes are a benefit, unless it is the increased leukocytosis and possibly the absence of pus organisms. In surgical work, we notice in high altitudes we are not so liable to have infected wounds. The pus organisms do not seem to be so abundant there as at sea-level. Possibly in tuberculosis this enables us to avoid the mixed infection. The cure of tuberculosis is largely dependent on avoiding or getting rid of the mixed infection.

DR. E. S. BULLOCK, Silver City, N. Mex.: As a profession we do not seem to be able to come to any conclusion as to the value of climate. Scientifically Dr. Webb, as well as my associate, Dr. L. S. Peters, and myself, has done a great deal to elucidate this problem. I have, it seems, but one gentleman to reply to, and he says the results are practically the same, regardless of altitude. In a paper read before the Chicago Medical Society I compared the results obtained at sanatoriums at sea-level and those at high altitudes, and I found fully 30 per cent. of difference in the statistics in favor of high climate. Dr. Turban, of Davos Platz, has published results proving the same thing for Europe. Some of us may be overoptimistic in marking our cases, but that could not hold regarding all the reports we receive from sanatoriums. We often find, as Dr. Wright says, lesions of greater extent when the patients come to us than were reported at the patient's home. That is the result, not of the bad effect of high altitude on the lesion, but probably because the initial diagnosis at the patient's home is often very faulty. We who do this work know we can never master this subject or control tuberculosis until we teach the profession at large how to make an early diagnosis. That does not apply to specialists, but it does apply to the rank and file.

THREE UNUSUAL BRONCHOSCOPIC CASES

A. TUMOR IN THE BRONCHUS. B. TRACHEAL STENOSIS. C. TRACHEAL SCLEROMA *

EMIL MAYER, M.D.

Laryngologist, Mount Sinai Hospital; Chief of the Nose, Throat and Ear Department, Mount Sinai Hospital Dispensary

NEW YORK

CASE 1.—Margaret I. W., aged 3 years, was referred to me Sept. 16, 1910, by Dr. Linn Emerson, presenting the following history:

History.—At the age of eleven days she had a sudden attack of obstruction to her breathing, which yielded to treatment after a short time. Until January of the present year, she had been well. At this time she had an attack of grippe followed by a spasmodic cough, the latter remaining ever since. July 4, she had an attack of measles, and on the 25th her breathing became so interfered with that emphysema of the neck and body appeared, lasting several days. At the present time breathes with a loud expiratory effort day and night. Has chronic constipation, prolapsus ani, and a capricious appetite.

Examination.—Child is well nourished and has good color. There is a peculiar, loud respiration showing interference with the expiratory act. The respirations are so loud as to be heard quite a distance and remain of this character day and night, becoming somewhat worse on crying or exertion. There is no rise of temperature, and the child plays about, getting easily tired, however. While she is never cyanosed, her distress in breathing often culminates in an attack of vomiting, but without relief to the breathing. The examination of the chest shows a sudden distention of the entire chest wall at each expiratory effort, except for the lower portion of the left lung. In this part there is dulness on percussion and entire absence of air entering the lung in the left lower lobe. There is no bronchial catarrh. The diagnosis of some form of stenosis of the bronchus at the bifurcation on the left side was made. An *x*-ray picture, taken by Dr. Jaches, radiographist of Mt. Sinai Hospital, showed an absence of air entering the lower lobe of the left lung. There was no evidence of any foreign body shown in the *x*-ray picture.

Operation.—At Mt. Sinai Hospital, under gas and ether, bronchoscopy was done on September 30, the instrument used being the Killian hand light with a short tube. The child took the anesthesia very badly and was very much cyanosed. The holding of the epiglottis increased the cyanosis to so marked a degree that it was rapidly withdrawn. In the meantime, Dr. Yankauer, who assisted me, had a long tube attached to another Killian hand light to which he had an attachment for the throwing of ether vapor into the tube during the entire examination, and at my request he introduced the longer tube rapidly into the bronchus. At the bifurcation, directly over the entrance to the left lung, a new growth was seen having the general appearances of a papilloma; there seemed to be several of them with small pedicles and having in all a diameter of one-half inch. These were promptly removed and after their removal the breathing became very much freer, and air again entered at the lower portion of the left lung. The growth was referred to Dr. F. S. Mandelbaum, pathologist of Mt. Sinai Hospital, who reported that, the growth having been placed in formaldehyd solution, it was impossible to test for tubercle bacilli, but that the growth had all the appearances of syphilis.

Subsequent History.—The child recovered from the effects of the anesthesia, air freely entering into the formerly obstructed lung, and on the third day the child was sent to its home.

Five months later the examination of the child showed no evidence of interference with respiration, the cough having gradually ceased, and the child was apparently well. In the meantime the child had been examined by Dr. Sara Welt Kakels, whose report follows: "Well-developed child for her age; weight 26¾ pounds; temperature normal. On the skin and visible mucosae nothing abnormal. Of the superficial lymphatic glands, the anterior cervical and inguinal glands are slightly enlarged. The inspection of the buccal cavity shows a slight hypertrophy of the tonsils; voice and respiration are perfectly normal. Inspection of the thorax shows that the chest walls move freely during respiration, apparently symmetrically on both sides; percussion over both lungs is clear and resonant; lower borders of both lungs normal. On auscultation vesicular breathing is to be heard, on and off harsh over all the lobes of the lungs; heart normal on percussion and auscultation; thymus dulness present. Of the organs of the abdomen, the spleen is not palpable; the liver is very slightly enlarged; its lower border is one finger's breadth below the costal arch in the nipple line, while in the median line it is slightly above a point midway between the umbilicus and the xyphoid process. The urine shows no trace of albumin or sugar. The feces show microscopically no pathologic constituents. The blood-count is as follows: Hemoglobin 70 per cent.; red blood-cells 3,600,000; white blood-cells 10,200; differential count, polynuclears 59 per cent., small mononuclears 30 per cent., large mononuclears 8 per cent., eosinophils 3 per cent. Wassermann's test was negative."

A most careful investigation into the family history as well as that of the child, shows no evidence of specific disease. A summary of the case shows that the clinical diagnosis of a stenosis of the bronchus at the entrance of the left lower lobe of the lung was fully established, and that a happy result followed the removal of the growth. This is a combination that is exceedingly rare.

CASE 2.—Rose L., aged 12 years, an inmate of an orphan asylum, whose past history is necessarily indefinite, was referred to me Dec. 12, 1910, with the following history:

History.—Except for an attack of diphtheria six years ago, followed by a protracted cough, she had been, as far as known, entirely well until four weeks ago when she began to cough, constantly, spasmodically, and without secretion. There was a short, sharp, ringing cough with intervals of a few seconds, sounding more like the bark of a dog than a cough, rasping and very noisy. While not so frequent at night, still it occurred then. All manner of treatment had failed to relieve it; there was no dyspnea; the voice was clear, and there were no râles in the chest. It is almost impossible to express the extreme annoyance to the child as also to its surroundings, occasioned by this noisy cough.

Examination.—The child had hypertrophied tonsils and an adenoid growth, but these were not considered as factors in causing cough. Below the chords, high up in the trachea, there was a tracheal thickening which showed itself not only in the laryngeal tissue but also by direct examination. The bronchoscopic tube was then introduced, and on its introduction it was felt to pass through the firm constriction and the diagnosis of spasmodic cough due to a tracheal stenosis, probably post-diphtheritic, was made. The report of the findings was made the following day to the attending physician, Dr. Gershel, who reported that, immediately following the bronchoscopy, all cough had ceased and this condition of cure of most distressing cough has remained permanent from the single dilatation following the entrance of the bronchoscopic tube. The general appearance of the trachea at the time of examination clinically resembled those cases of tracheal scleroma that I have seen, and the diagnosis would have been investigated were it not for the fact that the child was born in the United States, and no case of this affection originating *de novo* in this country has ever been presented. The examination with the bronchoscope was readily made under local anesthesia.

CASE 3.—Rachel R., aged 18 years, six years in the United States, a native of Russian Poland, was admitted to the surgical wards of Mt. Sinai Hospital, service of Dr. Howard Lilienthal, two and a half years ago, suffering from dyspnea, requiring tracheotomy. Before operating, Dr. Lilienthal requested me to see the case to determine the nature of the stenosis.

Examination.—I found a tracheal thickening with much induration on the line of the cricoid cartilage, and much crust formation in the nose with hyperplasia, and I made the clinical diagnosis of tracheal scleroma. A portion of the thickened tis-

* Read before the American Laryngological Association at its thirty-third annual meeting, Philadelphia, 1911.

V. 57
1911

sue from the nose was removed and sent to the pathologic department for examination. The report came back from Dr. F. S. Mandelbaum, chief of that department, that it was negative. A second portion was removed a few days later and this time it was reported rhino-scleroma. Operation was not advised and the patient was then kindly referred by Dr. Lilienthal to the out-patient department of the Mt. Sinai Hospital Dispensary under my care. The dyspnea subsided, the voice was husky and the nasal secretions kept up their crust formations until a year ago when she began again to show symptoms of tracheal obstruction. From this time on dilatation by means of the Killian tubes was practiced every week regularly with the result that the breathing became normal. Of late the dilatation has been done less frequently, about once a fortnight, and the patient is in a very comfortable condition. The bronchoscopic tube in this case enters very readily; the patient has become tolerant and she has been exhibited at various medical societies, usually permitting the introduction of the bronchoscopic tube in about thirty seconds' time. During my absence from the city, the same treatment was followed by Dr. Yankauer.

This case is of special interest in that most cases of tracheal scleroma have heretofore required trachectomy together with the more or less constant wearing of the canula. This method is surely only palliative.

In presenting these three unusual cases, I conclude that the correctness of the clinical diagnosis was fully established in the first case, while the happy result of complete recovery followed the removal of the growth which failed to show any symptoms of syphilis, and in the absence of all tests must be put down as a benign growth, again illustrating the value of the bronchoscope as a means of diagnosis and an assistance in the surgical treatment of these cases.

In the second and third cases, the bronchoscope was first used as a means of diagnosis and then as a remedial agent, producing cure by rapid dilation in one case, and giving decided relief in the other.

40 East Forty-First Street.

PLACENTA PRÆVIA—A WARNING

J. F. BALDWIN, M.D.
Surgeon to Grant Hospital
COLUMBUS, OHIO

Within the last two years an unusually large number of articles have appeared in the medical press on the subject of placenta prævia, the last article being the exhaustive one by Ellice McDonald, in *Surgery, Gynecology, and Obstetrics*, of June, 1911. In these different articles, and in the various text-books at my command, I fail to find any reference whatever to the possibility of concealed hemorrhage going on after the leg had been brought down by the Braxton-Hicks method.

That that is a very real danger, however, though undoubtedly very rare, is evidenced by a case which I saw in consultation about two years ago.

The patient was in charge of an unusually well-qualified young physician, a graduate of Johns Hopkins. She was a multipara, whose previous labors had been easy. She had been having slight hemorrhages, but nothing alarming. Further delay, however, being thought inadvisable, she was brought to the hospital for delivery, and I saw her then for the first time in consultation. It was decided to adopt the Braxton-Hicks procedure, and with no difficulty I brought down a leg, as I had done in very many previous cases. The parts were dilating nicely, and thoroughly dilatable, so that it seemed evident that delivery would be accomplished in a short time. As there was no further need for my services I left the patient, her physician exerting steady traction, which seemed to put a complete stop to hemorrhage. Very little blood had been lost during the manipulation. Within an hour, and while I was taking lunch in the hospital dining-room, an assistant came in and said that he thought the attending physician would like to see me, as the patient seemed to be going to pieces. I left the table instantly, and within a minute was at the patient's bedside. She was dying in collapse, and a glance at the abdomen showed the uterine tumor much larger than before, so that the diagnosis of internal hemorrhage was apparent. I directed the doctor to pull, while I exerted pressure above, and in an instant the child was born, the birth being followed by such a deluge of blood and blood-clots as I had never seen before. The patient was *in articulo mortis*, and expired a very few moments after the child was delivered.

Since the above was written there have appeared, in the *American Journal of Obstetrics*, the papers which constituted a symposium on placenta prævia at the last meeting of the American Gynecological Society. These papers are by Edwin B. Cragin, Edward P. Davis, J. Clifton Edgar, Henry D. Fry and T. S. Newell. None of these papers mentions the possibility of a concealed hemorrhage after the leg is brought down, while Fry speaks positively of "bleeding being absolutely under control" by this method, and advises slow delivery to prevent laceration of the lower uterine segment. A few paragraphs later he adds: "hemorrhage is controlled, and if the delivery is left to uterine action the dilatation is slow and safe."

Had the text-books contained any warning of the possibility of concealed hemorrhage going on in these cases, I think the attending physician would have been on his guard and would have recognized the condition before the hemorrhage had reached a fatal stage.

I have had a rather large consultation experience in placenta prævia, and this is the only death from hemorrhage of which I have had any personal knowledge, and this death can be looked on as in a sense unnecessary.

A MODIFICATION OF SLUDER'S METHOD OF TONSILLECTOMY

LUTHER COLBY ROOD, M.D.
Visiting Surgeon for Diseases of the Nose, Throat and Ear to the Mount Sinai Hospital
BOSTON

The purpose of this paper is to describe a modification of the method of guillotine tonsillectomy which Dr. Sluder advocated in THE JOURNAL March 25, 1911, page 867. This modification has been used by me with unvarying success in seventeen cases; its results have proved equal to any dissection tonsillectomy operation formerly tried. It has invariably removed the tonsil and capsule completely, rapidly and bloodlessly. This modification consists in using the ordinary tonsil snare, passed over the tonsil external to the already applied guillotine. Specifically, after the tonsil has been pressed through the window of the guillotine, by the alveolar eminence of the mandible, and engaged by the blade of the guillotine, in the manner described by Dr. Sluder, the distal end of the snare loop is passed over the guillotine and under guidance of the index-finger is placed posterior to, and thus external to, the tonsil and its capsule. Tightening the snare, in the usual manner for the particular snare, completes the removal.

In the use of this method it has not been found necessary to go in twice for any tonsil, however soft, shallow or imbedded. Dr. Sluder mentions the occasional need of going in a second time for remnants of tonsil or capsule. This is probably due to faulty technic, especially if this modification is used; for, if the tonsil is pressed through the guillotine so that the tonsil is drawn

from its bed, the snare, when passed over, can be depended on to complete the dissection thoroughly. Further, the snare wound is less likely to bleed than any sharp or dull guillotine wound.

This method is far more rapid than any other form of tonsillectomy. I have myself operated on five cases of tonsils and adenoids in forty minutes, including the time for ether administration. I do not remove any of the anterior pillar as advocated by Dr. Sluder and see no advantage in so doing. This itself may be a frequent source of bleeding. In all other details, I follow closely the description of Dr. Sluder.

419 Boylston Street.

CHALK PASTE A SUBSTITUTE FOR BISMUTH PASTE

JAMES R. MITCHELL, M.D.
Lecturer in Chemistry, Fort Worth University Medical College
FORT WORTH, TEXAS

Medical science is deeply indebted to Beck of Chicago for bringing forward the curative properties of bismuth paste. Many a now-healed sinus would still be discharging pus but for the agency of this paste. Since Beck contributed his technic, no appreciable advance has been made by any other surgeon.

Bismuth paste, however, has its limitations. Its chief danger is nitrite poisoning, even when the paste is used in but moderate amount. Two years ago, I witnessed a case in which such poisoning developed. A patient was being treated for a sinus which had persisted eight months following an empyema operation. About four ounches of paste were injected. Three days later, the resulting combination of stomatitis, intestinal colic, diarrhea, albuminuria and symptoms of collapse necessitated the removal of the paste. The patient refused further treatment and left the hospital with the sinus still discharging.

The germicidal action of bismuth is slight. The action of the paste is for the most part mechanical. It is a foreign body, and as such, stimulates a local leukocytosis. Further, it keeps the walls of a wound separated, allowing healing to take place by granulation from the bottom. Bismuth, the metal, has no magical properties. In the paste, then, it is merely a mechanical stimulant to local leukocytosis.

As bismuth has no exclusively specific property, and moreover has the disadvantage of being poisonous, it is necessary to seek a non-poisonous substitute for use in sinuses requiring large quantities. A patient consulted me for the treatment of a large sinus in the thigh following a psoas abscess, and three tuberculous sinuses leading into the shoulder joint. To inject either bismuth or iodoform meant to invite drug poisoning. I decided to try a substitute for the bismuth nitrate, and my final choice was a paste containing equal parts of petrolatum and chalk. This healed all the cavities satisfactorily in three months.

Chalk paste is an improvement on bismuth paste. Like the bismuth, it separates the walls of the wound, and allows *x*-ray photographs. It seems more active than bismuth, probably because the calcium is a proved chemical, as well as a mechanical, stimulant to local leukocytosis. It is safer than bismuth, for a patient cannot be poisoned with chalk.

Chalk paste has won my confidence, and I offer it to the medical profession as an improvement on bismuth paste in every case in which paste injection is indicated.

COMPARATIVE VALUE OF SOME URETHRAL AND OTHER GERMICIDES

J. BAYARD CLARK, M.D.
Assistant Genito-Urinary Surgeon to Bellevue Hospital
AND
L. A. WYLIE, M.D.
Pathological Intern, Bellevue Hospital
NEW YORK

The experiments which form the basis of this contribution were done under the kind direction of Dr. Charles Norris, director of the pathologic department of Bellevue Hospital.

The method employed was as follows: To 2 c.c. of the various dilutions of antiseptics to be tested, were added 2 c.c. of a salt emulsion of the organisms used. It will immediately be seen that this procedure diluted to one-half the antiseptic solution. To equalize this, double the strength of the antiseptic solution was used. The silver preparations were bought in original bottles and prepared according to directions. The liquor cresolis compositus, under the commercial name of lysol, was from the hospital drug supply.

In the case of each organism but a single strain was employed. Controls for each organism were made and the average number of colonies, per plate, were noted. The tubes in which the bacteria were exposed to the different solutions of the different germicides, were left for a period of five, fifteen and thirty minutes, respectively. Then one loopful from each tube was mixed into a tube of acetic-agar and poured into a sterile Petri dish. These were incubated at 37 c. and observed at the end of twenty-four and forty-eight hours. The accompanying results are tabulated after the manner of Post and Nicoll,[1] whose tables appear in THE JOURNAL, lv, 1635.

In the case of argyrol, it is to be noted that our results are not in accord with those of others whose results we have reviewed. We have no explanation for this difference.

It has already been demonstrated by a number of laboratory workers that the killing power *in vitro* of the several silver preparations is weak or nil as compared with the action of silver nitrate.

It would seem superfluous to add another protest to the list were it not for the deep root this idea has taken that the silver preparations hold some peculiar power not possessed by silver nitrate in its various degrees of dilution.

The majority of these silver preparations seem to hold a peculiar innoxiousness which, along with their taking color in solution, play a part in urethral medication which fortunately interferes very little with Nature's efforts toward recovery. In fact, they have constituted a means of cleansing the surface, of dilating the urethral canal, and, in the case of the more irritating members of their large family, of causing mild and transient hyperemia, which is a real augment to Nature's plan.

For the privilege of subscribing to their use the dues are about fifty times larger than when an equally efficient dilution of silver nitrate is chosen. This is a consideration when supplying a large hospital.

Bellevue and Allied Hospital spent last year:

For silver nitrate	$ 108.00
for collargolum	25.00
For protargol	224.00
For argyrol	910.00
Total	$1,267.00

1. Post and Nicoll: The Comparative Efficiency of Some Common Germicides, THE JOURNAL A. M. A., Nov. 5, 1910, p. 1635.

V. 5
1911

To determine the power of penetration, Wildbolz,[2] of Bern, has done a series of experiments with silver nitrate and protargol on the living mucous membranes of the eye and urethra in dogs—a reduction of the silver being accomplished by exposure to a Finsen light. In the urethra he used 1:1000 to 1:100 silver nitrate and 1 per cent. to 3 per cent. protargol solutions. There was some penetration of the metal down to the subepithelial tissue. In penetrating power, the silver nitrate easily predominated.

NUMBER OF COLONIES IN ONE LOOPFUL TEST SOLUTION AFTER TWENTY-FOUR HOURS' INCUBATION

Solution		Organism	5 Min.	15 Min.	30 Min.
Argyrol	30 per cent.	Strep.	0	0	0
"	30 per cent.	Staph.	0	0	0
"	30 per cent.	B. coli	0	0	0
"	30 per cent.	Gon.	70	50	10
"	10 per cent.	Strep.	4	0	0
"	10 per cent.	Staph.	0	0	0
"	10 per cent.	B. coli	0	0	0
"	10 per cent.	Gon.	90	70	50
"	1 per cent.	Strep.	50	35	35
"	1 per cent.	Staph.	160	75	100
"	1 per cent.	B. coli	1,500	500	100
"	1 per cent.	Gon.	120	50	25
Protargol	10 per cent.	Strep.	25	20	20
"	10 per cent.	Staph.	100	1	75
"	10 per cent.	B. coli	0	0	0
"	10 per cent.	Gon.	30	15	25
"	5 per cent.	Strep.	49	31	26
"	5 per cent.	Staph.	150	50	50
"	5 per cent.	B. coli	0	100	25
"	5 per cent.	Gon.	90	50	35
"	1 per cent.	Strep.	48	44	39
"	1 per cent.	Staph.	∞	200	150
"	1 per cent.	B. coli	1,000	700	200
"	1 per cent.	Gon.	100	35	25
Silver nitrate	2 per cent.	Strep.	0	0	0
"	2 per cent.	Staph.	0	0	0
"	2 per cent.	B. coli	0	0	0
"	2 per cent.	Gon.	0	0	0
"	1 per cent.	Strep.	6	5	0
"	1 per cent.	Staph.	0	0	0
"	1 per cent.	B. coli	10	15	50
"	1 per cent.	Gon.	0	0	0
"	½ per cent.	Strep.	10	8	0
"	½ per cent.	Staph.	0	0	0
"	½ per cent.	B. coli	100	36	10
"	½ per cent.	Gon.	0	0	0
"	1 to 1,000	Strep.	15	70	6
"	1 to 1,000	Staph.	0	14	5
"	1 to 1,000	B. coli	600	500	300
"	1 to 1,000	Gon.	0	0	0
"	1 to 5,000	Strep.	23	40	15
"	1 to 5,000	Staph.	10	6	3
"	1 to 5,000	B. coli	1,000	5,000	5,000
"	1 to 5,000	Gon.	0	0	0
"	1 to 10,000	Strep.	44	26	50
"	1 to 10,000	Staph.	22	5	3
"	1 to 10,000	B. coli	∞	∞	∞
"	1 to 10,000	Gon.	525	40	20
Cresol Comp.	10 per cent.	Strep.	0	0	0
"	10 per cent.	Staph.	0	0	0
"	10 per cent.	B. coli	0	0	0
"	10 per cent.	Gon.	0	0	0
"	5 per cent.	Strep.	0	0	0
"	5 per cent.	Staph.	0	0	0
"	5 per cent.	B. coli	0	0	0
"	5 per cent.	Gon.	0	0	0
"	2.5 per cent.	Strep.	0	0	0
"	2.5 per cent.	Staph.	5	0	0
"	2.5 per cent.	B. coli	0	0	0
"	2.5 per cent.	Gon.	0	0	0
"	1.2 per cent.	Strep.	0	0	0
"	1.2 per cent.	Staph.	4	0	0
"	1.2 per cent.	B. coli	200	0	0
"	1.2 per cent.	Gon.	550	300	0
"	0.5 per cent.	Strep.	3	0	0
"	0.5 per cent.	Staph.	8	0	0
"	0.5 per cent.	B. coli	∞	40	16
"	0.5 per cent.	Gon.	600	500	100
Collargolum	2.5 per cent.	Strep.	15	8	0
"	2.5 per cent.	Staph.	15	1	0
"	2.5 per cent.	B. coli	0	0	0
"	2.5 per cent.	Gon.	80	100	15
"	1.25 per cent.	Strep.	25	12	10
"	1.25 per cent.	Staph.	∞	100	100
"	1.25 per cent.	B. coli	0	100	100
"	1.25 per cent.	Gon.	120	100	75
Largentos	20 per cent.	Strep.	0	0	0
"	20 per cent.	Staph.	7	0	0
"	20 per cent.	B. coli	0	0	0
"	20 per cent.	Gon.	18	10	0
"	5 per cent.	Strep.	28	20	15
"	5 per cent.	Staph.	50	2	20
"	5 per cent.	B. coli	0	0	0
"	5 per cent.	Gon.	75	0	50

As to the value of antiseptics penetrating below the surface: In order to check up the work of other experimenters, Derby,[3] of Boston, made a series of observations as follows: He took samples of sterile hydrocele fluid and bovine serum; to 1 c.c. of the serum he mixed 1 c.c. of the silver preparation to be tested and to this he exposed the staphylococcus. The nitrate of silver, 2 per cent., showed a growth of the organisms after an exposure of from thirty to forty minutes; the protargol, 8 per cent., after sixty minutes; the argyrol, 50 per cent., gave an abundant growth after three and one-half hours. Other preparations showed the same results.

This goes to show how completely the body fluids can destroy the bactericidal power of antiseptics when brought into contact with them, and how little advantage there can be in a drug having the power to penetrate below the surface.

2. Wildbolz, H.: Experimentelle Untersuchungen über die Wirkung von Silber Nitrat und Protargollösungen auf labende schleimhäute, Ztschr. f. Urol., 1907, pp. 185-208.

3. Derby, G. S.: An Experimental Study of the Bactericidal Power of Various Silver Preparations, Boston Med. and Surg. Jour., 1908, clv, 341.

HINTS FOR RADIOGRAPHERS

MAURICE A. WALKER, M.D.
DILLON, MONT.

It is usually necessary to make two exposures in different axes when radiographing injured or diseased parts, or suspected ones. This can be nicely accomplished by using a single plate. This applies particularly to the extremities, where most of such work is required.

After placing the plate in its envelopes, if using an 8 by 10 plate for instance, draw with a pencil on the face of the outside envelope, a line which will divide the contained plate into two equal parts, each of which will then measure 5 by 8 inches. Have at hand a piece of sheet lead about 10 by 6 inches and thick enough to be absolutely impervious to the rays—about 1/10 inch thick is what I use for this purpose. After the plate is in position under the part to be radiographed, using one-half of the plate, as indicated by the line mentioned, cover the other half of the plate with the sheet of lead, adjusting it accurately to the line on the envelope. Then make the exposure on the unprotected part of the plate.

Remove the lead to the other half, and adjust for the second exposure on the part of the plate not yet exposed. Make the second exposure in a direction transverse to the former, or in such direction as may be required by the case and its anatomy. Be sure that the two exposures are approximately equal in intensity, so that they will develop together. When the negative is finished, the complete record of the case is on a single plate, which is not only much more convenient than using separate plates, but also more economical.

It is also my practice to make all needed notes of the exposure, such as the date, initials or name of patient, direction of radiance, number of tube, its penetration, amount of current, distance of plate from target and length of exposure, on some unimportant part of the negative, with a soft lead-pencil. Thus the whole technic is indicated without more trouble, and is always at hand when examining the negative. If a print is made this will not often show, but then it is not required. The penciled words will usually not be visible until the negative is examined in such direction that the light is reflected from the graphite which has been deposited. Then the words become sufficiently plain to be easily read.

In indicating the direction of exposure, I do not write dorso-ventral, intero-external, etc., as is generally advised, but use only the word which describes the part next the sensitive film. This describes the exposure as accurately, and obviates all possible errors of understanding later. Except when radiographing parts containing only one bone and no joints, such as the middle thirds of the thigh or arm, it is not even necessary to write "right" or "left," as the anatomy of the part in connection with mention of the side next the plate, will enable the physician examining the negative to see which side is represented on the plate.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

ACIDOL.—Betaine Hydrochloridum.—Betaine Hydrochloride. —Acidol, $C_5H_{11}NO_2.HCl$, is the hydrochloride of betaine.

It is prepared by the action of hydrochloric acid on betain. Acidol consists of colorless crystals, freely soluble in water. It contains 23.8 per cent. absolute hydrochloric acid.

Actions and Uses.—In the dry state acidol does not split off hydrochloric acid at ordinary or high temperature, but when dissolved in water there is a gradual liberation of the acid. It therefore represents a very convenient method of administering hydrochloric acid.

It is used for the same purposes as hydrochloric acid.

Dosage.—0.5 Gm. (8 grains), which corresponds to about 1.1 Cc. (18 minims) of diluted hydrochloric acid U. S. P., to be taken dissolved in water.

Manufactured by the Actien-Gesellschaft für Anilin-Fabrikation, Berlin, Germany (Farbenfabriken of Elberfeld Co., New York). Not patented. U. S. trademark No. 43,628.

Acidol Tablets, 8 grains.—Each tablet contains acidol 0.5 Gm. (8 grains).

Acidol Pepsin Tablets, Mild.—Each tablet contains pepsin 0.2 Gm. (3 grains) and acidol 0.05 Gm. (1 grain). U. S. patent No. 806,615 (Dec. 5, 1905; expires 1922).

Acidol Pepsin Tablets, Strong.—Each tablet contains pepsin 0.1 Gm. (1½ grain) and acidol 0.4 Gm. (6 grains). U. S. patent No. 806,615 (Dec. 5, 1905; expires 1922).

HEGONON.—Silver nitrate ammonia albumose.—Hegonon is a substance obtained by treating silver ammonium nitrate with albumose, said to contain approximately 7 per cent. of organically combined silver.

It is a light brown powder readily soluble in water. Its aqueous solutions do not coagulate albumin, even on heating, nor are they precipitated by sodium chloride.

Actions and Uses.—The pharmacologic action of Hegonon is similar to that of other protein silver preparations. Hegonon is used as a substitute for silver nitrate.

Dosage.—It can be used in concentrations of from 1 to 6,000 to 1 to 2,000 for irrigation. Urethral injections of ¼ per cent. are recommended.

Manufactured by the Chemische Fabrik auf Actien, vorm. E. Schering, Berlin, Germany (Schering & Glatz, New York). U. S. patent and trade-mark applied for.

CYPRESS OIL—Oleum cupressi.—An oil distilled from the leaves and young branches of *Cupressus sempervirens L.*

Cypress oil is a yellowish liquid with a pleasant odor suggesting cypress. After evaporation it leaves an odor that reminds one of labdanum or amber. Its specific gravity is 0.88 to 0.89 and its specific rotation + 4° to + 14°. The oil is soluble in 4 to 5 parts of 90 per cent. alcohol.

Cypress oil consists chiefly of terpenes, principally d-pinene; sylvestrene and sesquiterpenes appear also to be present. The oil contains small amount of esters and occasionally a substance which appears to be an optically inactive modification of cedrol.

Actions and Uses.—Cypress Oil is said to be useful by inhalation for the relief of whooping-cough.

Dosage.—The oil should be diluted with 5 parts of alcohol and 15 Cc. (½ ounce) of the mixture sprinkled three to four times daily over the coverlet, pillow and underwear of the child. The application may be repeated once or twice during the night, if recurring attacks are unusually severe.

Non-Proprietary Preparation:

Oil of Cypress.—Schimmel & Co.

Manufactured by Schimmel & Co., Miltitz near Leipsic, Germany (Fritzsche Bros., New York). No patent or trade-mark.

Therapeutics

HICCUP: SINGULTUS

Like some other symptoms, hiccup or singultus, while not to be distinguished as a distinct disease, nevertheless sometimes becomes of sufficient importance to merit individual consideration. The phenomenon consists of a spasmodic contraction of the diaphragm accompanied by a characteristic noise caused by the impact of the incoming air against a closed, partially closed, or at least not fully opened glottis. In normal respiration, coincident with the descent of the diaphragm there is an opening of the glottis through the contraction of the crico-arytenoid muscle. This opening does not occur when there is hiccup. Many believe that accompanying the spasmodic contraction of the diaphragm, there is also a spasmodic closure of the glottis, but this has not been definitely determined. The motor impulse which gives rise to the spasm of the diaphragm arises in the medulla and is transmitted through the phrenic nerve. This impulse may be caused reflexly by any irritation in the course of the pneumogastric nerve, especially in the stomach or the abdominal viscera. Irregular contraction of the diaphragm may also be aroused by pressure on the phrenic or pneumogastric nerves in the chest by tumors, aneurysms, etc.

Most cases in which hiccup is a prominent feature may be divided into several more or less distinct classes. The first class may be distinguished as acute, transient hiccup, and includes a very great proportion of all cases in which the symptom is observed. It occurs most commonly in infants and children, and usually does not last more than a few minutes. It is generally associated with some disturbance of the digestive organs, either from overfilling of the stomach, or from the ingestion of food which is indigestible, or to the accumulation in the stomach of gas which has been produced by fermentation, or to the accumulation of air which has been swallowed. These simple cases are generally easily benefited by simple measures of treatment.

When a baby begins to hiccup, it is often given granulated sugar, and many times with good result. Or a teaspoonful of plain water, or of water with anise or peppermint, any of which may be successful. An older child may be made to hold his breath for a portion of a minute, or to drink rapidly a glass of water, either of which methods may hold the diaphragm quiet long enough to overcome the tendency to spasm. Adults can hold the breath longer, and frequently this will bring about a cessation of the hiccup.

Sometimes provoking sneezing will stop the hiccup. Also, if a patient is well and strong, any slow muscular

V. 57 1911

effort, as lifting a weight, or especially pulling the body several times up by the hands holding onto any trapeze arrangement, is often successful.

If these simple measures do not afford relief, and the stomach is overloaded, an emetic, as ipecac, may be administered. If the symptoms do not seem to be sufficiently severe to demand such heroic treatment, a carminative, such as a few drops of the spirit of peppermint with the addition of a little soda, or 20 drops of the aromatic spirit of ammonia, will often afford relief. As preventive treatment, any indigestion should, if possible, be corrected, and constipation should be treated.

In the second class may be grouped those cases in which the motor impulse giving rise to the spasm is excited by a central irritation which may be brought to the medulla through the blood. Here belong the cases of hiccup arising in patients suffering with diabetes or with uremia in chronic nephritis. In this same class probably belongs the hiccup occurring in patients who are seriously ill with typhoid fever and in sunstroke; and here perhaps, also, should be classed those cases in which hiccup occurs as a symptom of hysteria or other functional nervous disease.

When uremia is the agent which is causing the hiccup, treatment by hot-air baths will often prove efficacious by dilating the peripheral circulation, promoting elimination through the skin, and allowing the kidneys to resume their function.

In the third class may be included those more serious cases in which hiccup is a most distressing symptom, and in which by its obstinate persistence, if unrelieved, it often hastens or precipitates a fatal result. In this class are included a large variety of abdominal troubles; among them may be enumerated inflammation of the bowels due to a perforation of any abdominal viscus and especially of an ulcerating appendix; any obstruction to the function of the intestine, such as paresis of the muscular coat of the intestine, obstruction by a mass of fecal matter which it is impossible to propel through the canal, obstruction by intussusception or volvulus, or by bands of cicatricial tissue on the outside of the intestine or strangulation of a hernia; inflammation of the liver and of the gall-bladder, especially when complicated by gall-stones; inflammation of the pancreas; and cystitis. Arteriosclerosis, by causing degeneration of the arteries in the neighborhood of the origin of the phrenic nerve, may cause hiccup. A fractured rib may also cause obstinate hiccup. In such cases as these hiccup is often a most obstinate and dangerous symptom, and a great variety of remedial measures may have to be tried before the hiccup is stopped, even if it is possible to stop it.

At first, certain external remedies may be tried; the easiest and simplest is a large mustard plaster applied to the epigastrium. If there is much distention of the abdomen from gas in the intestines, turpentine stupes may be applied. Often an enema containing turpentine will be found useful. Sometimes pressure on the phrenic nerve where it passes over the scalenus anticus muscle will prove effective. Pressing three fingers of each hand on each side of the trachea and larynx, with the thumbs on the back of the neck, so as to compress the phrenic and pneumogastric nerves has sometimes proved effective. The application of a counter-irritant, such as a mustard paste, to the back of the neck, or spraying this region with ether is sometimes useful.

A great variety of antispasmodic medicines have been employed with varying degrees of success. In some cases a hypodermatic injection of morphin and atropin will stop the spasm, or atropin sulphate, in a dose of $^1/_{150}$ of a grain may be given alone, hypodermatically, and repeated two or three times a day, if needed. In individual cases there may be objection to using this remedy on account of the danger of masking the symptoms and obscuring the diagnosis. The spirit of camphor and the spirit of chloroform may often be given with advantage, and they may be combined with the compound tincture of lavender. These are especially useful when the nervous element predominates and when there is no severe organic difficulty.

One of the most useful drugs in controlling convulsive action of the muscles is chloral, and many obstinate cases of hiccup are relieved by this drug. It may be administered in a dose of 1 gm. (15 grains), and repeated, if necessary, in two hours.

Gelsemium has been highly praised by some practitioners. This drug is believed to diminish spasmodic irritability of the muscles by action on the nerve centers. It also depresses the respiratory center, which obviously is affected when this symptom is present. It acts quickly, its full effect being obtained in an hour, and the effect commencing to pass away in three hours. A reliable preparation should be prescribed, and the fluidextract may be given in doses of 3 or 4 drops, repeated every three or four hours, or the tincture may be given in a dose of 15 or 20 drops, repeated every four hours.

Nitroglycerin, in doses of $^1/_{100}$ of a grain, repeated every hour or every two hours, is beneficial in some cases. Occasionally the inhalation of a few drops of nitrite of amyl will produce quick relief. Musk is highly recommended by some writers. Scopolamin hydrobromid, in a dose of $^1/_{200}$ of a grain, may be given by the mouth or hypodermatically, and repeated, if needed.

Sometimes chloroform to partial or complete anesthesia must be administered to check the spasmodic contraction of the diaphragm, and in some cases the hiccup will not recur.

In some cases, confining forcibly the movements of the ribs, either by straps of adhesive plaster applied around the lower part of the chest or by a bandage tightly pinned around, will afford relief by diminishing the extent of the movement of the diaphragm.

The state of the bowels should always be inquired into, and if constipation is present, its cause must be determined. Especially is it important to examine the abdomen for the presence of hernia. A small femoral or inguinal hernia may easily escape a superficial examination, and may give hiccup as an early symptom, and later cause obstruction of the intestines, which can, in some cases, at this early period be easily relieved by reduction of the hernia. It is important to secure action of the bowels in most cases of hiccup to remove any collection which may set up irritation or which may be giving rise to any toxemia.

Double Congenital Club-Hand with Absence of Radii.—A case of double congenital club-hand of the radiopalmar variety, with absence of radius on both sides, is recorded by A. H. Tubby (*Proc. Roy. Soc. Med.*, May, 1911). The case was unusual, inasmuch as the development of the metacarpal bones and phalanges appeared to be perfect. The ulna was curved and greatly thickened, especially toward its lower end. In this case and two similar ones, Tubby operated by splitting the ulna vertically up about the lower two-thirds, drawing outward the outer fragment and fixing its lower end with silkworm-gut to the outer part of the carpus. The effect was to steady the wrist and hand and to increase their range of flexion and extension. Pronation and supination could not be restored.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[*For other information see second page following reading matter*]

SATURDAY, JULY 29, 1911

PROTEIN FEVER

Attention was recently called in these columns[1] to the growing belief that many of the features of infectious diseases are, in all probability, anaphylactic in character, and result from the liberation in the body of toxic cleavage products split from bacterial proteid by ferment action. Striking confirmation of this view is afforded by recent work by Vaughan and his colleagues[2] on the so-called "protein fever." This phenomenon—the production of heightened temperature by the parenteral introduction into the body of proteid material—is not of recent observation, although its correct interpretation has long been obscure. So the postoperative rise of temperature following aseptic surgical work is probably of this character, and Vaughan believes that "hay-fever" or "rose-fever" is simply the result of reaction of the body to the vegetable proteids absorbed through the respiratory mucosa.

Although the two examples just cited are, comparatively speaking, not dangerous, he was able in animals to produce disease of grave and even fatal character, by the proper administration of the foreign material. Thus in rabbits the repeated injection of small quantities of white of egg caused fevers closely resembling typhoid in type, while by varying the frequency and size of dosage, remittent and intermittent fevers could be produced. The general character of the process was shown by the fact that besides white of egg, laked foreign corpuscles and vegetable proteids likewise caused fever when introduced by other than intestinal channels.

Vaughan concludes that the great majority of fevers originate in this way, the foreign proteid in most cases being the small, but constantly maintained, quantity of bacterial matter lodged in the body during an infection. The ferments by which the toxic cleavage products are liberated he considers to be of two sorts: the one normally present and of only limited specificity, the other resulting from the stimulation of certain tissue cells by the deposition in them of the proteid when this occurs in quantities too great for the small quantity of the more general ferment to destroy. The localization of an infection, according to this view, depends largely on the predilection of the proteid for some particular tissue—that of the pneumococcus for the lungs, of typhoid for the mesenteric and other lymph nodes, etc.

The actual causation of fever, he believes, is due to three factors operating in varying degrees—the unaccustomed stimulation of cellular activity by the foreign material, the heat liberated by the cleavage of this material, and the reaction between the products of this cleavage and the tissues. From the minute quantities of proteid that suffice to produce pyrexia, it is probable that the second factor is for the most part negligible, and that the other two are mainly instrumental in the cause of fever.

1. Infection and Anaphylaxis, THE JOURNAL A. M. A., March 11, 1911, p. 746.

2. THE JOURNAL A. M. A., Aug. 21, 1909, p. 629; Ztschr. f. Immunitätsforsch., 1911, ix, 458

AN EFFICIENT BOARD OF HEALTH

We have previously commented favorably on the work of the Montclair (N. J.) Board of Health. The Sixteenth Annual Report of the Board recently issued is worthy of its immediate predecessors, and deserves wide circulation. It shows what can be accomplished by a progressive and well-informed board of health even with a modest regular annual appropriation of $5,000 (for a population of about 22,000). Chemical and bacteriologic work is carried on, vital statistics are carefully collected and recorded, inspection of certain sources of food-supply is frequent and evidently thorough, and outbreaks of communicable disease are carefully investigated.

Especially does the supervision of the milk-supply seem to have reached a high degree of efficiency. As in previous reports, a complete survey of the milk situation is given and the merits and demerits of the different milk dealers and sources of supply are discussed with the fullest frankness. Dairies are rated according to the plan adopted by the U. S. Bureau of Animal Industry and the comparative ratings for both equipment and methods are published in full. The bacterial counts are also given, and altogether the data supplied furnish the physicians and other interested citizens of Montclair with a good basis for forming a judgment as to the purity and wholesomeness of the individual milk-supplies. The outspoken methods employed are shown by the following excerpts:

"*Borden's Condensed Milk Company:* This supply has already been referred to in connection with the refusal of this company to have its herds tested for tuberculosis. We have no criticism to make as to the manner in which the Borden Company handles the milk after it comes into its possession. . . . Before the milk is received by the Borden Company, however, it is not handled under such favorable conditions. The milk is not from tested cattle, proper care and cleanliness are not enforced at the time of milking and the milk is not properly cooled."

"*Canfield, M. H.:* This supply was uniformly high in bacterial count and steps will be taken to exclude it from the town unless improvement is shown."

V. 5
1911

"*Croot Bros.:* This supply was from an excellent dairy, but owing to careless handling the bacterial counts were excessive."

It is by publicity of this sort as well as by inspection and instruction that really noteworthy results have been reached. The average bacterial count of all the milk sold in Montclair in 1910 was only 46,000. Two dairies throughout the year delivered milk with a maximum bacterial count of less than 20,000. One dairy reduced its average from 80,000 in 1909, to 9,700 in 1910. Conditions like this are naturally not reached all at once, but are the result of persistent endeavor extending over several years. Montclair is certainly to be congratulated on possessing so efficient a board of health.

THE INTERNATIONAL PLAGUE CONFERENCE

The International Plague Conference called together by the Chinese government after the outbreak of the plague in serious proportions in that country, has made to that government an interim report which includes a summary of the evidence collected by the commission and a series of resolutions and recommendations approved by the conference; but this report will not be made public until the full report of the conference is issued. From the news accounts of the discussions already published, however, the work and the conclusions of the conference may be briefly summarized.

No types of plague were found other than the pneumonic or the combined pneumonic and septicemic, and this is a point of great interest in this epidemic. The other great epidemics have been mostly of the bubonic form. The theory that the plague originated from infected tarabagans, a species of marmot, a fur-bearing animal of the squirrel family, has been accepted as probably the correct one. That this animal is extremely susceptible to plague was shown by the American delegates. It has also been found that this animal suffers from a form of subacute or chronic plague, and this probably explains why the plague is endemic in Northern China. Neither rats nor other animals besides the tarabagan were found to be largely affected with the plague, only one rat having been found to be infected in upward of 30,000 rodents examined by the Chinese and Japanese. One dog was said to have died from plague at Dalny, and there were circumstantial accounts of mules having been infected. The plague promptly subsided when attacked in earnest and the chief factor in its eradication appears to have been the drastic preventive measures taken by the Russian, Japanese and Chinese authorities, although climatic and other natural influences may have contributed to this result. That there was no decrease in the virulence of the bacillus during the later stages of the epidemic seems to have been conclusively demonstrated. Even in the small villages and hamlets the inhabitants were frightened by the fatality of the disease into taking crude but effectual precautions.

It was almost concluaively demonstrated also, that the disease was introduced into every new center by the arrival of persons actually suffering from plague or incubating the disease. That pneumonic plague can be carried by clothing or merchandise or by vermin was not proved and the direct human factor in its transmission seemed to be the chief one. Experiments undertaken by the American and Japanese delegates seemed to prove conclusively that the breath of the sufferer was not infective apart from particles of sputum expelled by coughing or possibly by forcible speaking. The sputum, however, was shown to be infective as long as it remained moist or frozen, and it is believed that dust can carry infection only by acting as the medium for small particles of moist or frozen sputum, and houses are probably not infective apart from the presence of such infective sputum. It has been determined that the incubation period varies from two to seven days, but is usually three to five days. The pulse was regarded by some as the earliest diagnostic sign; by others, including the Russian delegate, Zabolotny, the temperature was relied on. The absence of marked physical signs in the chest during the early stages was notable, and rendered diagnosis difficult. Less than five recoveries were recorded.

The value of plague vaccines and serums during a pneumonic epidemic was thought to be doubtful, although this feature developed considerable difference of opinion among the delegates. It was suggested that attenuated living cultures of the bacillus might be used for protective inoculation, but this was condemned by some as being too dangerous and therefore unjustifiable.

Two facts seem to stand out prominently from the work of the conference, and these are that the human host is the most important factor in the spread of the infection, and that rather close contact is a necessary element. This is in line with the knowledge that is now becoming more clearly established in regard to other epidemic and infectious diseases, and is the most important point to be taken into consideration in dealing effectually with them. Even the possibility of immune carriers was demonstrated in at least one instance in this epidemic, and this is in line also with our growing knowledge of the infections.

In connection with the present perfection of laboratory methods in the study of diseases, especially of the infectious diseases, the conference plan of reaching results in a large way in diseases that menace large populations is a marvelously quick and efficient one. This conference, along with the other important international conferences of recent years, is a distinct step forward in the control or elimination of deadly world-epidemics.

It is gratifying for Americans to note that in this important conference the delegates from this country, Drs. Strong and Teague, took a most prominent, if not the leading part.

Current Comment

EDITORIAL ESTIMATES OF DR. WILEY

One of the most striking results of the effort to remove Dr. Wiley has been the unanimity and vigor with which the daily newspapers of the country have denounced the attacks of his enemies. Almost without exception, the press has recognized that the charges preferred against him were largely technical and were trumped up simply to afford a pretext for his removal. The influences of the interests concerned in this attack have been clearly recognized. The Providence (R. I.) *Evening Tribune* says:

> That there is a conspiracy to oust Dr. Wiley is indisputable. It has made itself visible for a long time past, both outside and inside the Department of Agriculture. It has been carried on with venomous persistence by those poisoners of the stomachs of the people whom he has hunted down and exposed, those manufacturers of fraudulent foods and compounders of misbranded drugs who hope to slide back into their old enormously profitable evil practices when Dr. Wiley is out of office. It is they who have uncovered this technical offense on his part and the animus and purpose of the charges they make against him are entirely clear.

The Burlington (Vt.) *News* is particularly outspoken:

> The plunderers and poisoners of the people are determined to get Wiley out of their way so that they can go on unrestricted in making money out of poisons. Dr. Wiley has done a remarkable work in his fight against food and drink poisons. He practically alone was responsible for the rigid law against placing any deleterious substance in the foods and drinks of the people.

The Wheeling (W. Va.) *Intelligence* recognizes the animus behind the attack:

> Dr. Wiley's efforts have driven adulterators and food poisoners out of business. This is a great and splendid work. Naturally a man engaged in such a work will arouse antagonism and his enemies will discredit him if possible.

The Buffalo (N. Y.) *Enquirer* endorses Dr. Wiley as the protector of the people:

> Pure food and drug laws amount to nothing without a man of the stamp of Dr. Harvey W. Wiley, chief of the Bureau of Chemistry, to enforce them. Dr. Wiley has done much to reduce the sale of adulterated foods and drugs. That work has been good for the consumer, although it has seriously interfered with the business of the adulterators. The latter naturally do not like Dr. Wiley. The former love him and will not quickly forgive unfair treatment of him. . . . The people will stand by themselves if they stand by Wiley. He is the man who has made the goods match the label. He is protecting the people from fraud, much of it worse than the fraud which merely cheats the purchaser out of money. The enmity he has aroused is his glory. The hatred of crooked manufacturers is proof of his efficiency.

The Providence (R. I.) *Journal* says:

> Popular judgment is not infallible, to be sure. It is too often based on mistaken premises. But it is a sound instinct which leads both Congress and the people to believe that the present situation has been brought about, in the last analysis, by resentment over Dr. Wiley's services in behalf of public health.

The above are samples of the editorial comments from all over the country. They show plainly that neither the press nor the people are disposed to tolerate the dismissal of a faithful and valuable public servant on a trumped-up, technical charge. They recognize the influences which, secretly and underhandedly, have been at work for years for the overthrow of the one man who stood between the dishonest manufacturer and the public. It is impossible to believe that the president will approve the findings of Attorney-General Wickersham, since, whatever may be the nature of the technical offense charged, it must be fully evident to President Taft that the great American public will not for a moment approve of the removal on a mere technicality of an honest official who stands in the public eye as the champion of the pure food law and the protector of the people's rights.

NEW PRESERVING MEDIUM

What promises to be of useful application for museums and demonstration purposes is a solution invented by Wickerschener, of the Berlin Zoologic Museum, for fixing and preserving plants and animals in their natural colors. The solution is prepared by dissolving in 3 liters of boiling water 100 grams of alum, 25 of sodium chlorid, 12 of potassium nitrate, 60 of potassium carbonate, and 10 of arsenious acid. To this 1,200 c.c. of glycerin and 300 c.c. of methyl alcohol are added. Objects preserved in this liquid are said to retain their form, color and suppleness to a remarkable degree. Even after a considerable lapse of time muscle tissue retains its fresh appearance, and can be cut as in the fresh state, and ligaments remain perfectly pliable, permitting the demonstration of movements as in life. This solution differs materially from the Kaiserling fluid, although both contain potassium salts. The composition of Kaiserling's fluid is: potassium nitrate, 10; potassium acetate, 30; liquor formaldehydi, 750; distilled water to make 1,000.

THE CHOLERA SITUATION

Notwithstanding the somewhat alarming headlines in the newspapers, regarding the presence of Asiatic cholera in the United States, there is no cause for alarm. In the first place, those in charge of the quarantine stations are thoroughly alive to their responsibility, and, consequently, there is little fear of many cases coming to this country. In addition to the usual methods for preventing those suffering with infectious diseases from landing in this country, the United States Public Health and Marine-Hospital Service has made additional regulations for the present conditions, in that all steerage passengers arriving from ports that are likely to be infected with cholera are subjected to bacteriologic examination and detention until such examination proves that they are not cholera bacillus carriers. The period of observation has also been extended from five to ten days. It should be remembered, further, that medical science has so advanced that even though the epidemic did obtain a foothold in this country, it could easily be controlled, and the individual cases managed much better than would have been the case twenty-five years ago. To repeat, there is no cause whatever for alarm.

V. 5
1911

Medical News

ILLINOIS

New Alienist Appointed.—Governor Deneen is said to have accepted the resignation of Dr. J. L. Greene, Springfield, alienist on the State Board of Administration and to have appointed as his successor, Dr. Frank P. Norbury, whose resignation from the position of superintendent of the Kankakee State Hospital was noted in THE JOURNAL, July 22. It is announced that Dr. Greene has been offered the position of superintendent of the Arkansas State Hospital, Little Rock.

Personal.—Dr. Maurice A. Bernstein, senior physician of the Oak Forest Infirmary, has resigned.——In a collision with an electric car, July 20, the automobile of Dr. Fremont C. Knight, Waukegan, was demolished, but Dr. Knight received only slight injury.——Dr. John C. Foley, Waukegan, was knocked down by his automobile and suffered a fracture of the clavicle.——Dr. Henry Ward Clifton, Macomb, has moved to Lacon.——Dr. Ferris F. Tannus, Bloomington, has sailed for Europe.——Dr. David E. Yantis has been appointed physician of the Illinois Traction System at Urbana.——Dr. James A. Flautt, who has been seriously ill at his home in Otterville, is reported to be convalescent.

Chicago

Personal.—Dr. and Mrs. Lewis L. McArthur and Dr. and Mrs. Arthur Dean Bevan sailed for Europe, July 19.——Dr. and Mrs. Wesley John Woolston, Geneva, Ill., have sailed for Europe.——Dr. Clara Pauline Seippel has qualified as assistant city physician, and will assume her duties August 9.

Asked to Report Diarrheal Diseases.—Dr. George B. Young, Commissioner of Health, requests that physicians report all cases of diarrheal diseases on the postal cards furnished by the department. This has an especial significance on account of the outbreak of cholera among immigrants at New York City. While the department is confident that the national and local authorities are taking every precaution, including the bacterial examination of discharges of every one coming from cholera-infected ports, it behooves the local profession, especially those who practice among Italians, to take special precautions.

INDIANA

State Treatment of Rabies.—The State Board of Health on July 10, began the treatment of the first person who appealed for aid under the new law which provides for the treatment of indigent persons afflicted with rabies.

State Hospital for Tuberculosis.—The secretary of the State Board of Health has issued a circular letter to physicians urging them to make use of the State Hospital for Tuberculosis, Rockville, which was opened April 1, but to which only a few patients have thus far applied for admission.

State Board Changes.—Dr. John R. Hicks, Covington, has been appointed a member of the State Board of Health to succeed Dr. George T. MacCoy, Columbus, term expired; Dr. William Niles Wishard, Indianapolis, president of the board, has resigned; Dr. T. Henry Davis, Richmond, has been reappointed a member and Dr. James S. Boyers, Decatur, has been appointed as successor to Dr. Wishard.

New Dean at Indiana University School of Medicine.—Dr. Burton D. Myers, secretary of the Indiana University School of Medicine, writes that Dr. Charles P. Emerson has been appointed by the trustees as dean of that medical school. It is stated that Dr. Emerson will enter on his teaching and executive duties at the beginning of the fall term. The arrangement provides that he may do a limited consultation practice so long as that does not encroach on his college duties. Dr. Emerson will reside in Indianapolis.

Personal.—Dr. Jacob R. Etter, Crawfordsville, has been designated as surgeon general of the Uniform Rank of Odd Fellows of the World.——Dr. Charles A. Stafford, Indianapolis, is seriously ill on account of cerebral hemorrhage.——Dr. E. A. Carlson has been appointed secretary of the board of health of Madison, vice Dr. Jefferson Cooperider, deceased.——Dr. Orange G. Pfaff, Indianapolis, who has been seriously ill with septicemia, has recovered.——Dr. Urban A. Lyle has resigned from the board of health of Lafayette.——Dr. Aldine E. Morgan has been appointed chief surgeon of the Soldiers' Home of Lafayette.——Dr. Harry H. Smith, Jeffersonville, has resigned as physician to the Indiana State Reformatory to accept the position of chief surgeon for the American Rolling Mill Company at Middletown, O., and will be succeeded in August by Dr. James H. Walker, Henryville.——Dr. Summer A. Furniss, Indianapolis, was burned painfully on the hands and forearms, July 14, by the ignition of gasoline which was being poured into the tank of his automobile.

IOWA

Personal.—Dr. Albert De Bey, Orange City, has been elected president of the State Board of Medical Examiners, and Dr. Bert L. Eiker, president of the State Board of Health.——Dr. Guilford H. Sumner, Waterloo, has been reelected secretary of the State Board of Health.——Lieut. Horace Lee Husted, M. C. N. G., Iowa, Muscatine, has resigned.——Dr. George A. Smith, Clinton, has been appointed a member of the State Board of Health, vice Dr. George Edward Decker, Davenport, resigned.——Dr. George W. Coit, after forty years' practice in Missouri Valley, announces that he has decided to retire.——Dr. Frederick Pomeroy Lord, Iowa City, has resigned from the faculty of the state university to become professor of anatomy in Dartmouth Medical School, Hanover, N. H.

Medical Societies Elect.—At the fifty-second annual meeting of the Iowa Union Medical Society, held at Cedar Rapids, July 12, the following officers were elected: president, Dr. David C. Brockman, Ottumwa; vice-president, Dr. Lewis William Harding, Solon; secretary, Dr. Frederick G. Murray, Cedar Rapids (reelected); treasurer, Dr. George P. Carpenter, Cedar Rapids (reelected), and censors, Drs. Laurence W. Littig, Iowa City; Frederick Cecil Skinner, Le Claire (reelected), and William Edward Owen, Cedar Rapids.——The Austin Flint Medical Society at its annual meeting held in Clear Lake, July 11-12, elected the following officers: president, Dr. Joseph Clinton Powers, Hampton; vice-president, Dr. Elmer E. Dunkelberg, Waterloo; secretary, Dr. Charles Freeman Starr, Mason City, and treasurer, Dr. Will L. Hearst, Cedar Falls. Waterloo was selected as the next meeting place.——Des Moines Valley Medical Society at its fortieth annual meeting held in Ottumwa, elected the following officers: president, Dr. Alfred Oscar Williams, Ottumwa; vice-presidents, Drs. William W. Eastburn, Sigourney, and Samuel K. Davis, Libertyville; secretary-treasurer, Dr. Fred W. Bowles, Ottumwa, and censors, Drs. Henry A. Leipziger, Burlington; Charles Stephen James, Centerville, and Charles B. Taylor, What Cheer.——At the annual meeting of Jones County Medical Association, held in Anamosa, Dr. Aram G. Hejinian, Anamosa, was reelected president; Dr. Aileen B. Corbit, Wyoming, was reelected vice-president, and Dr. Thomas M. Redmond, Monticello, was elected secretary and treasurer.

MARYLAND

Reception to Governor and Staff.—Following a review of the Maryland National Guard, a reception was given to the governor and the staff, July 18, by Dr. Charles H. Conley, Adamstown.

Society Entertained.—The members of the Baltimore Medical Society were the guests of Drs. Frank Eldred and G. Carville McCormick, Baltimore, at a crab feast at Penwood Grove, July 19.

Hospital Building Planned.—The Washington County Hospital Association has bought Kee Mar College, Hagerstown, and will convert it into a hospital at an expense of about $60,000. The idea of building a hospital on the farm recently purchased in the suburbs of the city has been abandoned and the farm will probably be sold.

Portrait of Old Physician.—The committee of the Baltimore Medical Society consisting of Drs. William Tarun, Baltimore; Dr. James Gorsuch, Fork, and Dr. L. Gibbons Smart, Lutherville, have sent a circular letter to members of the society asking subscriptions to procure the portrait of Dr. James H. Jarrett, Towson, who graduated from the University of Maryland, fifty-seven years ago. The portrait is to cost about $250 and is to be deposited in the hall of the Medical and Chirurgical Faculty of Maryland.

Baltimore

Nurses' Home.—A building for the nurses in connection with the Hospital for the Women of Maryland is to be built at an expense of about $12,000.

Personal.—Dr. James S. Brotherhood has been appointed resident physician, Dr. Willis D. Gatch, resident surgeon, and Dr. Roger Sylvester Morris, associate professor of medicine in Washington University, St. Louis.——Dr. Carey B. Gamble, Baltimore, has sailed for Europe.——Dr. George Heller, who has been ill for a long while, is convalescent.——Dr. Harry Wilbur Stoner is seriously ill with an infection of the hand.——Drs. Richard Holden Follis and William Alexander Fisher have returned from Europe.

MASSACHUSETTS

Cholera in Boston.—A case of Asiatic cholera is reported to have occurred in Boston. The victim was a boardinghouse keeper, who took into her house as lodgers two sailors who it is said had recently arrived on a steamship from an Italian port. The patient died July 7. The relatives of the deceased are under observation at the Quarantine Hospital and the board of health has begun the work of examining all individuals who may have come into contact with the dead woman. The two sailors have disappeared and their whereabouts are unknown.

Infants' Hospital.—The Rotch Memorial Infants' Hospital on the grounds of the Harvard Medical School is nearly completed. The building has a frontage of 120 feet and is three stories in height. On the first floor are the reception room, modern nursery, dining room, food room, room for medical supplies, modifying and refrigerating rooms and room for graduated nurses and medical directors. On the second floor are two wards accommodating twenty-two patients, a lecture room, a surgical ward and an operating room. On the third floor are six private rooms for patients and rooms for the nurses and maids.

MICHIGAN

Bequests.—By the will of the late Charles S. Chase $100,000 is bequeathed to the Harper Hospital, Detroit. The income is to be used for the establishment of free beds and for the offering of prizes for research work looking toward the cure of cancer. It is to be called the Chase Fund in memory of the father, mother and brother of the deceased.

Michiganaw Society Organized.—The first annual reunion of the Michiganaw Association, composed of members of the faculties and graduates of the Michigan College of Medicine and Surgery and the Saginaw Valley Medical College, was held in Detroit, July 12-14. The association has a membership of about 600. Dr. John G. Kirker was elected president; Dr. Vine Larue Smith, vice-president; Dr. Martin V. Meddaugh, secretary, and Dr. Berthold Bertram, treasurer, all of Detroit.

Sanatorium Trustees Meet.—The annual meeting of the board of trustees of the Michigan State Sanatorium for Tuberculosis, Howell, was held July 11. The superintendent announced that twenty-five more patients can be accommodated in the new buildings now available and an appropriation has been granted by the legislature for additional buildings. J. A. Heath, Richmond, was elected president; Dr. Wilbert B. Hinsdale, Ann Arbor, secretary, and G. W. Teeples, Pinckney, treasurer.

Personal.—Dr. Edward Thomas Abrams, Hancock, has been appointed a member of the state board of health, vice George S. Harrington, Kalamazoo.——Dr. Kenneth Kilbourn, Detroit, fell down the companionway of a steamer, while crossing the Straits of Mackinac, July 7, and sustained severe injury to the spine.——Dr. Francis J. W. Maguire, Detroit, has been severely ill with septicemia, due to an operation wound.——Dr. Herbert W. Yemans, Detroit, has been appointed a delegate to the Esperanto Congress to be held in Antwerp, August 20-21. Dr. Yemans was given a banquet by the Detroit Esperanto Club July 15.——Dr. James C. McGregor, Flint, was operated on for appendicitis at Los Angeles recently.——Dr. Ralph E. Balch, Kalamazoo, who has been seriously ill with septicemia, is reported to be improving.

NEW YORK

Personal.—In a head-on collision between two automobiles near Middletown, July 14, Dr. Lillian Morgan of that city and Dr. Herman Mendolwitz, Brooklyn, were severely cut and bruised.

Inebriate Hospitals.—The governor has signed a bill authorizing the establishment of hospitals and industrial colonies for the care, treatment and occupation of inebriates by cities of the first and second class. The government of such hospitals is to be in charge of a board of inebriety consisting of seven members who are to serve without compensation. The new law makes numerous changes in the penal law in regard to the question of intoxication, one of the principal amendments being to put inebriates under the supervision of the board of inebriety under certain conditions and restrictions.

Cholera Laboratory for the Port.—At the direction of Governor Dix a fully equipped state bacteriologic laboratory is being established at the port of New York. Dr. William Seagrove Magill, director of the State Hygienic Laboratory, and three assistants have been detailed to take charge of this laboratory.

New York City

Personal.—Dr. and Mrs. George Montague Swift, Dr. and Mrs. Philip Embury, Dr. John Van Der Poel, Dr. and Mrs. Frederic Grosvenor Goodridge of New York and Dr. Henry Holdich Morton of Brooklyn have left for Europe.

New Seaside Hospital for Babies.—A new hospital to accommodate 184 patients has been opened at Surf Avenue and Twenty-Second Street, Coney Island. The building was erected under the auspices of the Children's Aid Society of Brooklyn.

Hospital Donated to Poughkeepsie.—Mrs. Samuel W. Bowne of New York City has presented $50,000 for a tuberculosis hospital for the city of Poughkeepsie. The city has already started the erection of a tuberculosis hospital and Mrs. Bowne's gift will tend to make the institution one of the most complete in the state.

Bequests.—The will of the late Mrs. May Cossitt Dodge contains among other bequests the following: the Lincoln Hospital, $25,000, and Adirondack Cottage Sanitarium at Saranac Lake, $10,000.——The will of the late Mr. Abraham Abrahams of Brooklyn bequeathes $50,000 to the Jewish Hospital of that city, the income of which is to be applied to the maintenance of the institution.

Decrease in Infant Death-Rate Continues.—The health department reports that for the week ended July 22 there were 344 deaths from all causes of infants under 1 year of age, as compared with 523 for the corresponding week of 1910. During the same week there were 157 deaths from diarrheal diseases compared with 323 for the corresponding week of 1910. Thus far this year the total saving of infant life is estimated at 716.

Whooping-Cough and Typhoid Fever.—Reports show that there are many more cases of whooping-cough in this city than there have been at the same period in many years and that the malady is by no means confined to children. The health department has received many complaints because mothers bring children afflicted with whooping-cough to the recreation centers, but the department holds that this is the best thing for the patients and that it would be unwise to place restrictions on this class of patients. For the four weeks previous to July 8 there were reported 140 cases of typhoid fever in the borough of Manhattan while for the same time in 1910 only seventy-four cases were reported. This increase so early in the season is attributed to the heavy rains following the prolonged drouth which was broken early in June.

Danger in Unbottled Milk.—The Subcommittee for the Reduction of Infant Mortality of the New York Milk Committee, because of complaints from nurses in the employ of the committee that much of the illness of infants was caused by unbottled milk, has made an investigation of 200 shops within easy distance of the committee's stations. Some of the samples of milk from these shops contained as high as ten million bacteria and some were highly adulterated. In order to perfect the organization of the different committees dealing with the pure milk problem, the Association of Infant's Milk Stations has been formed. A central office has been established at the Department of Child Hygiene at 969 Sixth Avenue where information as to the work of the milk stations is collected and distributed. This organization represents ninety milk stations in which 7,000 babies are cared for.

Infant Mortality.—Commissioner Lederle has made the following announcements regarding infant mortality in the city from July 1-15. For the week ended July 15, there were 359 deaths from infants under 1 year of age, as compared with 568 deaths for the corresponding week of 1910, and 148 from diarrheal diseases in infants under 1 year of age as compared with 363 in the corresponding week of 1910. From July 1-15, the period of intense heat, 706 deaths were reported of infants under 1 year of age as compared with 1,006 for the corresponding half of July, 1910. From January 1 to July 15, there were 8,043 deaths of children under 1 year as opposed to 8,353 deaths during the same period last year, and 1,454 deaths from diarrheal diseases of children under 1 year as compared with 1,711 for 1910. July and August are the months of highest infant mortality, and mothers are urged to take special precautions to guard the health of their babies during this time. Mothers are advised to take babies to milk stations to obtain pure milk and the services of doctors and nurses. If a baby is ill and the parents are unable to pay for medical attention, a physician or nurse can be obtained by telephoning to the office of the department of health.

V. 5
1911

NORTH CAROLINA

The Hookworm Campaign.—Dr. C. Wardell Stiles, scientific secretary of the Rockefeller Sanitary Commission, is making his headquarters at Raleigh and from this point he will cooperate actively in the field work of the hookworm forces now under the direction of Dr. John A. Farrall, assistant secretary for hookworm of the State Board of Health.

Personal.—Dr. Herbert D. Walker has been appointed acting assistant surgeon U. S. P. H. and M.-H. Service and has been assigned to his duty at the port of Elizabeth City, N. C., vice Dr. J. E. Wood, deceased.——Dr. Lorenzo D. McPhail, Rockingham, has been appointed superintendent of health of Richmond County.——Dr. Edward J. Wood, Wilmington, is reported convalescent after a severe attack of typhoid fever.

PENNSYLVANIA

Hospital to Collect Board.—The trustees of the State Insane Hospital at Danville have been instructed by the Attorney General's office to collect the cost of maintenance from estates or relatives of patients able to pay. This rule will hereafter obtain in all similar institutions.

New Instructors at the University of Pennsylvania.—The following changes in the teaching force of the Medical Department of the University are announced, Dr. G. T. Thomas to be associate professor of applied anatomy; Dr. George William Norris to become assistant professor of medicine in place of the late Dr. Aloysius O. J. Kelly; Drs. Joseph Rex Hohensack, William E. Quicksall, Penn-Gaskell Skillern and Nate Ginsburg to become assistant demonstrators in anatomy; Dr. Howard A. Sutton, assistant demonstrator of anatomy, to become assistant demonstrator of osteology; Dr. Norman Leslie Knipe to become assistant instructor in obstetrics; Dr. Oscar H. Plant to become demonstrator of pharmacology; Dr. James Harold Austin, demonstrator in pathology, to become associate in research medicine; Dr. A. B. Eisenbrey, associate in research medicine, to become instructor in surgery; Dr. James S. Hickey, absent on leave, will resume duty as assistant in physiology; Dr. A. H. Hopkins will become instructor in gynecology; Dr. Ralph S. Lavenson, absent on leave, will resume duty as instructor in medicine; Dr. William H. MacKinney will become assistant instructor in genito-urinary diseases.

Safeguarding of Pennsylvania Against Cholera.—The state health commissioner is taking most careful precautions to safeguard the state against cholera. He is keeping under surveillance all immigrants who come into Pennsylvania from cholera-infected ports. Since October 14,433 immigrants have come into the state and have been under surveillance by the state health officers until it was positively assured that the immigrants were not infected. The Surgeon-General United States Public Health and Marine-Hospital Service notifies the State Department of Health of the destination of every immigrant who comes from a cholera-infected port. If an immigrant goes to a city or borough the commissioner at once notifies the secretary of the local health board, instructing that he be kept under observation for at least ten days and be placed under rigid quarantine in case of the development of any suspicious illness. Immigrants going into townships are under surveillance of the state health officer. When an immigrant comes to the state he is given a postal card and is told in case of illness within ten days to send the postal to the State Board of Health. On receipt of such a postal card from the immigrant the health officer at once investigates the nature of the illness. The health officer does not, however, rely on receiving the postal card from the immigrant, but keeps in touch with him during the period of surveillance.

Philadelphia

Bequest.—The will of the late John Dobson bequeatl.es $10,000 to the Episcopal Hospital.

Ground Broken for Phipps Institute.—Without any formal exercises ground was broken July 10 for the new hospital and laboratory buildings of the Henry Phipps Institute at Seventh and Lombard Streets.

Mortality Decreased.—During the week ended July 22 the report of the Bureau of Health shows 485 deaths, as compared with 714 for the previous week. Twenty-eight deaths were caused by heat and there were 169 deaths of children under 2 years of age.

Personal.—Dr. H. Brooker Mills has been elected physician to the Northern Home for Friendless Children.——Dr. Warfield Theobold Longcope has been appointed assistant professor of medicine in Columbia University.——Drs. James K. Young, William Louis Rodman and Milton B. Hartzell have sailed for Europe.

City Modified Milk Station.—In order to further the crusade against infant mortality, Dr. Joseph S. Neff is planning to have the city maintain its own modified milk plant. It is proposed to turn the old police station on Wood Street, above Seventeenth, into a plant for the modifying of milk and arrangements will be made to distribute it free among mothers too poor to buy milk of the proper standard.

Babies' Hospital Successful.—During the first ten days of the "Babies' Hospital" at Wynnefield, sixty babies were brought to the hospital and all were cared for. The staff of graduate nurses has been increased from six to twelve and four visiting physicians have been added to the staff. Two tents have been placed on the lawn for the use of nursing mothers. These accommodate eight, but it is hoped to make provision for fifteen. After the babies have been sent home cured visiting nurses are detailed to follow up the cases.

Pharmacists and Chemists Protest Against Dr. Wiley's Removal.—A meeting of the members of the Pennsylvania Pharmaceutical Association, Philadelphia Association of Retail Druggists, Philadelphia Branch of the American Pharmaceutical Association and its scientific section, Philadelphia Branch of the American Chemical Society, Philadelphia College of Pharmacy, etc., was held in Philadelphia July 17 at which strong and vigorous protests were made against the suggested removal of Dr. Wiley; a preamble and resolutions were adopted and sent to President Taft, endorsing and commending Dr. Wiley's work and deploring any movement which would either cause Dr. Wiley to resign at this time or would tend to hamper him in his efforts to make the Food and Drugs Act effective, and thus practically render it a dead letter.

TENNESSEE

College Merger.—It is reported that the Medical Department of the University of Tennessee is to be moved from Nashville to Memphis where it will be established in the building of the College of Physicians and Surgeons and that the latter school will go out of existence. An attempt was made to have the merger include also the Memphis Hospital Medical College but without success.

VIRGINIA

Personal.—Dr. John Lloyd, acting resident physician at Catawba Sanatorium, has been appointed physician to the institutions.——Dr. Albert C. Fox, Waynesboro, is reported to be seriously ill in the University Hospital, Charlottesville.

New Medical Society.—The physicians of Loudoun County met at Leesburg, July 14, and organized the Loudoun County Medical Society, with Dr. Nelson G. West, Leesburg, as president, and Drs. Eppa H. Heaton, Waterford, and Thomas T. Keen, Hamilton, vice-presidents.

WEST VIRGINIA

New State Board Members.—Dr. Charles A. Wingerter, Wheeling, and Dr. William W. Golden, Elkins, have been appointed, and Drs. Joseph E. Robins, Charleston; Hosea N. Rymer, Harrisville, and Hugh A. Barbee, Point Pleasant, have been reappointed members of the State Board of Health.

WISCONSIN

Personal.—Dr. J. E. Drury, Pepin, has returned from Europe.——Dr. John P. G. Bjorkman, Racine, who has been seriously ill, is reported to be convalescent.——Dr. Harry O. Delaney, Beloit, sustained a fracture of the patella, while cranking his automobile near Bennett, Ill., July 16.

County Tuberculosis Sanatoria.—Acting under the authority of the law, passed by the present legislature, Douglas, Outagamie, Fond du Lac and Dunn Counties have made appropriations for county tuberculosis sanatoria, and Eau Claire, Dane, Winnebago, Marathon, Racine and Ashland Counties will undoubtedly take action regarding this matter at an early date. Racine, it is said, contemplates the erection of a city sanatorium. The act under which the counties are operating appropriates $20,000 annually for defraying one-half of the expenses of maintaining persons afflicted with tuberculosis in country sanatoria. The county is given the authority to build tuberculosis shacks, one-half of the cost of maintenance of which will be borne by the county and one-half by the state.

New Medical Board.—The governor has announced the following appointments to the Wisconsin State Board of Medical Examiners: Dr. Henry W. Abraham, Appleton, successor to Dr. Lewis F. Bennett, Beloit; Dr. F. Gregory Connell, Oshkosh, successor to Dr. William T. Sarles, Sparta, and Dr. George H. Ripley, Kenosha, successor to Dr. Adellon P. Andrus, Ashland. The board at its meeting in Milwaukee elected the

following officers: Dr. Milton A. Barndt, Milwaukee, president; Dr. John M. Beffel, Milwaukee, secretary-treasurer; and the following committees were elected: auditing committee, Drs. William L. Thompson, Milwaukee; Charles W. Rodecker, Wonewoc, and F. Gregory Connell, Oshkosh; committee on local medical schools, Drs. Abner B. Bailey, Fennimore; John M. Beffel, Milwaukee, and George H. Ripley, Kenosha; committee on foreign colleges and departments, Drs. Milton A. Barndt, Milwaukee; Henry W. Abraham, Appleton, and F. Gregory Connell, Oshkosh; committee on midwives, Drs. Charles W. Rodecker, Wonewoc; John M. Beffel, Milwaukee, and George H. Ripley, Kenosha; and committee on reciprocity, Drs. Abner B. Bailey, Fennimore; Henry W. Abraham, Appleton; George H. Ripley, Kenosha, and William L. Thompson, Milwaukee.

GENERAL NEWS

Missouri Registration at Los Angeles.—The registration of members from Missouri was, through a clerical error, enumerated wrongly in THE JOURNAL July 22, page 328. That state should have been credited with 64 instead of 4. It was evident to almost anyone, of course, that 4 was an error.

Summary of the Cholera Situation.—The occurrence of cholera in New York and Boston is commented on editorially in this issue. The following is a brief summary of the events which have occurred since June 13, when the first infected steamer arrived.——The *Berlin* arrived at New York from Italian ports, June 13, with the report of a death from cholera at sea; the diagnosis was confirmed by bacteriologic examination of the dejecta. The vessel was inspected, the blankets and beds were disinfected by steam and the passengers and crew washed down with phenol solution. The 836 steerage passengers were removed to Hoffmann Island, June 13; of these 829 were released June 17. All of the twenty-one members of the crew, admitted to quarantine June 14, were returned to the steamer, June 17; all baggage was inspected, and foodstuffs and all soiled clothing were destroyed.——The *Europa* arrived at quarantine from Genoa and Naples, June 14, with a case of cholera. The vessel was inspected and detained four days for disinfection, which was carried out in the usual way. In addition, the patient's bed and those adjacent were disinfected with bichlorid solution, the hospital walls and beds were whitewashed, the hospital toilets treated with chlorid of lime and the hospital walls and floors whitewashed; the hospital was fumigated with sulphur (4 per cent.) for eight hours. The luggage of the steerage passengers and all below deck, mattresses, beds and tableware were disinfected by steam. The floors and windows were whitewashed, the latrines treated with chlorid of lime, soiled linen and steerage baggage were disinfected and foodstuffs destroyed. The 359 steerage passengers were removed to Hoffmann Island for observation June 15. Four steerage passengers were removed to Swinburne Island and nineteen members of the crew to Hoffmann Island on the same day. The members of the crew were discharged from quarantine June 19 and all passengers were discharged the next day.——The *Duca degli Abruzzi* arrived at New York Quarantine from Italian ports and Funchal, Madeira, June 20, reporting four cases of cholera. One died at sea, one on arrival, one later and one recovered and was discharged from quarantine July 18. One steerage passenger developed cholera, June 23, during detention at Hoffmann Island, and was removed to Swinburne Island. One male immigrant developed cholera at Auburn, N. Y., and died June 21, and one female immigrant developed cholera in Brooklyn, June 30, was reported as suspicious July 2, removed to Swinburne Island July 3 and died July 4. Both had been detained at quarantine from June 20 to June 27. The steamer was inspected, disinfected and detained five days. The 616 steerage passengers were removed to Hoffmann Island, June 20, for detention, and nineteen to Swinburne Island together with nine members of the crew. Of the detained passengers, 355 were discharged June 27 and 261 on the following day.——The *Laura* arrived June 21, having touched at Palermo, Sicily, June 7, with two cholera patients aboard. They had apparently recovered, but bacteriologic findings were positive and the patients were detained at Swinburne Island and finally discharged July 14. The vessel was inspected and disinfected in the usual way. The 341 steerage passengers were returned to quarantine June 23 before reaching Ellis Island, and were released June 27.——The *Moltke* arrived at New York from Italian ports, July 5, with a cholera case in a member of the crew, which had developed at sea, and eleven cases among steerage passengers, which developed at quarantine with four deaths. Up to July 18, four cholera carriers had been found among nine apparently healthy detained steerage passengers at quarantine. The vessel was inspected and disinfected in the usual way and was detained two days. Two hundred and twelve steerage passengers were removed to Hoffmann Island, July 7, with five members of the crew. Four days later forty-six members of the crew and one stowaway were removed to Hoffmann Island. One quarantine employee who had been guarding supposedly healthy passengers left the station and developed cholera on July 13. He was removed to Swinburne Island July 14 and died on the following day.——The *Perugia* arrived at the New York quarantine station from Italian ports, June 30, reporting two cases of diarrhea on the voyage which were bacteriologically shown to be cholera. One patient was a fireman, the other an immigrant. The steamer was disinfected and detained in quarantine, the passengers and crew held aboard in detention, and all eating and drinking utensils were boiled each time before using.——July 22 the ninth death from cholera occurred at Swinburne Island. The patient was a steerage passenger on the *Moltke*.——July 23 a case of cholera was reported from Boston believed to have been brought to that city by two sailors, members of a crew of a steamer supposed to have sailed from Italian ports. The victim was a boarding-house keeper at whose house the two sailors lodged. She died at the detention hospital, Gallup's Island, Boston. The sailors were subsequently taken ill, but disappeared and have not been located. The house of the patient who died has been thoroughly fumigated and all precautions taken to protect the twenty-five families who live in the house.——July 22, a patient admitted to Bellevue Hospital, supposed to be suffering from typhoid fever, was found to be a victim of cholera. This man was a Spaniard who came to New York as a fireman on a tramp steamer arriving July 1. The patient and his nurse were taken to Swinburne Island Hospital. July 24 the physicians at Bellevue report that the orderly who attended the sailor who developed cholera at Bellevue was ill with what was feared to be cholera.——July 25 the steamer *Oceanic* arrived from Italian ports with three cases of suspected cholera on board; the *San Giorgio* from Naples with a stowaway who was a cholera suspect, and on the steamer *Kirby Bank* which arrived at Perth Amboy, from Mexico, another cholera suspect was found.

PARIS LETTER

(*From Our Regular Correspondent*)

PARIS, July 7, 1911.

A Physician in the Ministry

There are in France many physicians engaged in active politics and some, Clemenceau and Combes, for instance, have obtained considerable eminence. The cabinet formed as a consequence of the last ministerial crisis includes a physician, Dr. Augagneur, former professor of the Faculté de médecine de Lyon. He was a deputy from that city and was for some time governor-general of Madagascar. He has just been appointed minister of public works, the postal service and telegraph.

Death of M. Adrian

M. Adrian, director and founder of the Société française de produits pharmaceutiques, has just died, aged 75. He was *préparateur* at the Ecole de pharmacie de Paris, member of the Société chimique, the Société de thérapeutique, etc., and contributed largely to the progress of pharmacy in France by his scientific works and by the founding of the society mentioned above.

Personal

Dr. Lande of Bordeaux has just been chosen president of the Association générale des médecins de France to replace Dr. Lereboullet, who has resigned.

The Bust of Brissaud at the Medical School

The collections of the Faculté de médecine de Paris have just been enriched by a bronze bust of Professor Brissaud executed from memory by a confrère, Dr. Paulin.

BERLIN LETTER

(*From Our Regular Correspondent*)

BERLIN, July 6, 1911.

Alcohol, if a Food, is Expensive, Wasteful and Harmful

The well-known hygienist of Munich, Professor v. Gruber, delivered an address on this subject at the international meeting of Good Templars in Hamburg. He reiterated that in spite of the well-known fact that it is rapidly absorbed from the digestive tract and is oxidized and possesses a large amount of potential energy—the heat produced by digestion of alcohol being greater than with albumin and sugar and but little less than with fat—alcohol cannot be regarded

as a foodstuff, because it is a narcotic poison and even in small quantities has a benumbing action on the brain. In addition it may by continued use cause other serious injury to the body. In consequence of its benumbing action alcohol is a bad source of energy for voluntary muscular work. As a result of the benumbing of the brain the motion of the muscles after small doses of alcohol (from 20 to 30 grams per day) is much less skilful than in the fasting condition. More muscles are put in motion and the muscles are contracted more powerfully than is necessary; incorrect movements are made, etc., so that the relation of the potential energy employed to the result accomplished is very unfavorable. Besides, by the benumbing of the brain, the effectual work, that is, the amount of work done in a unit of time, is quite considerably diminished. Finally alcohol should be rejected as a foodstuff not only on account of its poisonous character, but also because of its high price. A quarter's worth of potatoes yields about 4 times, of flour about 5 times, and of beet sugar about 4 times as many calories as of beer or 35 per cent. whiskey. If we consider that in consequence of the waste of energy in hard work done under the influence of alcohol, only about one-fourth part of the energy produced is expended advantageously for the body, the utter foolishness, from an economic standpoint, of the attempt to derive strength for the laborer from spirituous liquors becomes evident. If the working man buys the necessary energy for his labor in whiskey or beer, instead of in potatoes, he pays about thirty times as much and wastes his money as if one were to heat a steam boiler with wheat flour instead of coal.

Rabid Animals in 1910

In Prussia 247 injuries by the bite of rabid animals or of animals suspected of rabies were officially reported during 1910. This number is the smallest in the last nine years. Most of the injuries occurred in August, but there is no regularity as to the time of year, although as a general rule the number of bites is larger in the warmer season. Of the 138 animals which bit the persons, eighty-four were surely rabid; in fifty the diagnosis was doubtful, while four were not rabid. Of the 247 injured, 237 were submitted to the Pasteur prophylactic injection. Only one of the injured persons developed rabies. Her treatment was not begun until ten days after the injury; she died three months after her injury from blood-poisoning.

BUDAPEST LETTER

(From Our Occasional Correspondent)

BUDAPEST, July 9, 1911.

Tabes of Married Couples

At a recent meeting at the Budapest Royal Medical Society Dr. Hudovernig read a paper on this subject. He said that to date thirty-two cases of conjugal tabes have been recorded in the literature, and he reported three further cases of the kind. In his three couples, the tabes was subsequent to syphilis; in fact only one couple of the thirty-five known proved to be apparently free from syphilis. Thus in 80 per cent. of the conjugal tabes cases there was known syphilitic infection. The theory was first brought forward by Longres that tabes and general paralysis are produced by a special form of syphilis, i. e. a *virus nerveux*, which in his view possesses a special affinity for the central nervous system. Dr. Hudovernig declined to accept this view until placed in possession of real proofs. He holds, therefore, that the reason why so many syphilitics develop tabes or general paralysis while the remainder are free from any sequelæ of the kind, is not to be sought in the above-named affinity of the syphilitic virus for the central nervous system, but that this special predisposition is to be sought for in another direction, perhaps in a congenital or acquired particular predisposition of the nervous system.

Care After Recovery from Mental Disease

At the recent annual meeting of the Humanitarian Society, one object of which is the care of poor persons who have been discharged as recovered from asylums for the insane, it was stated that about 3,000 patients are discharged every year from asylums in Hungary. Such a fact clearly indicates the need for organized means whereby help may if possible be rendered in preventing a recurrence of the mental derangement. The Humanitarian Society is a branch of the Freemason Lodge, and during the past year has dealt with ninety-six cases, sixty-one women and thirty-five men. Many were boarded out in cottages in the country, and others were assisted by grants of money, clothing and promises of situations.

Marriages

LARRY B. MCAFEE, M.C., U. S. Army, Washington, D. C., to Miss Marjorie Deshon, at Hot Springs, Ark., July 7.

CHARLES BELFREY KELLY, M.D., Guelph, Ont., to Miss Marian Elise Miles of La Grange, Ill., July 13.

OSCAR WALTER NAUMAN, M.D., Craig, Mo., to Miss Fanny M. Warner of Aspinwall, Pa., recently.

MARTIN THOMAS POWERS, M.D., Rome, N. Y., to Miss Ada Belle Mason of Utica, N. Y., July 12.

GEORGE H. LONG, M.D., Luray, Va., to Miss Clara Laverne Hughes, at Earleston, Md., July 11.

MERLE VERNE FORREST, M.D., to Miss Margaret E. Warnock, both of Portland, Ore., July 9.

FREDERICK M. LEMEN, M.D., Buffalo, N. Y., to Miss Laurett S. Kurtz, at Buffalo, July 19.

FRANK E. CARPENTER, M.D., to Miss Mabel Hallenbake, both of Brooklyn, N. Y., July 10.

JAMES C. LANDREE, M.D., to Miss Anna M. J. Goldstein, both of St. Louis, July 15.

WESLEY J. WOOLSTON, M.D., to Miss Edna Chappell, both of Chicago, June 28.

Deaths

Edwin Hamilton Bidwell, M.D. University of Pennsylvania, Philadelphia, 1883; Dartmouth Medical School, Hanover, N. H., 1884; for three years coroner of Cumberland County, N. J., and for a similar time a member of the borough council of Vineland; from 1883 to 1888 secretary of the Vineland Board of Health, and a trustee of the New Jersey State Reform School for Boys from 1894 to 1898; died at his home in Vineland, July 5, aged 52.

Robert J. Carroll, M.D. Jefferson Medical College, 1867; acting assistant surgeon, U. S. Army, from 1867 to 1869; a veteran of the Civil War; for several years coroner of Dutchess County, N. Y., health officer of the township and of the village of Red Hook and president of the board of trustees of the village; died at his home, April 24, from carcinoma of the intestine, aged 67.

George W. Truitt, M.D. University of Maryland, Baltimore, 1875; formerly a member of the house of delegates, from Wicomico and Baltimore Counties, and State Senator from Wicomico County; for twelve years deputy fire insurance commissioner of Maryland; died at his home in Roland Park, Baltimore County, July 11, from cerebral hemorrhage, aged 65.

Edward Guadalupe Frisbie, M.D. Cooper Medical College, San Francisco, 1882; a member of the American Medical Association; formerly president of the State Board of Medical Examiners; president of the Thomas Hospital Association; died in that institution, July 13 from septicemia, due to a scratch of the forehead, ten days before, aged 53.

Isaac Richard Lane, M.D. Northwestern University Medical School, Chicago, 1867; for twenty years a practitioner of Mountain Grove, Mo.; a member of the Southwestern Medical Society of Missouri, and a charter member of Greene County Medical Society; died in Alexian Brothers' Hospital, St. Louis, May 19, from cerebral thrombosis and arteriosclerosis.

Hubbard Linley, M.D. University of Nebraska, Omaha, 1893; a member of the American Medical Association; division surgeon of the Missouri Pacific Railway, with headquarters at Atchison, Kan.; a member of the local board of pension examining surgeons; died suddenly in his office in Atchison, July 14, from heart disease, aged 51.

Watson Roberts O'Connor, M.D. Queens University, Dublin, Ireland, 1869; for many years a surgeon for the Peninsular and Oriental Steamship Company, but for more than thirty years a practitioner of Lawrence, Mass.; for three terms city physician and medical inspector of schools; died at his home June 24, aged 61.

Isaiah Winds Condict, M.D. College of Physicians and Surgeons, New York City, 1847; a member of the Medical Society of New Jersey and of the Tri-County (Sussex, Warren and Morris) Medical Association; one of the oldest practitioners of the state; died at his home in Dover, July 4, aged 93.

Samuel Mason Zeigler, M.D. University of Pennsylvania, Philadelphia, 1899; of Greenville, Pa.; a member of the Medical Society of the State of Pennsylvania; chief surgeon of the Bessemer and Lake Erie Railroad; was instantly killed in an automobile accident at Sherman, N. Y., July 2, aged 36.

Otis Milton Humphrey, M.D. Long Island College Hospital, Brooklyn, 1862; a pioneer resident of Minneapolis, Minn.; surgeon of Massachusetts volunteers throughout the Civil War and brevetted lieutenant-colonel for faithful and meritorious services in 1865; died at his home July 8, aged 79.

Robert Foster Andrews, M.D. Dartmouth Medical School, Hanover, N. H., 1858; a member of the Massachusetts Medical Society, and for more than fifty years a practitioner of Gardner; died at the home of his brother in North New Salem, July 10, from cerebral hemorrhage, aged 75.

John Kiern McDonnell, M.D. Dartmouth Medical School, Hanover, N. H., 1898; formerly of Meyer, Ariz.; a member of the American Medical Association; assistant chief surgeon to the United Verde Hospital; died at his home in Jerome, Ariz., May 25, from suppurative appendicitis, aged 35.

Emmor H. Price, M.D. Pulte Medical College, Cincinnati, 1873; of Chattanooga, Tenn.; a veteran of the Civil War, and for four years thereafter assistant revenue collector; died at the West Ellis Hospital, Chattanooga, July 10, from nephritis, aged 78.

James C. Thompson, M.D. Western Pennsylvania Medical College, Pittsburg, 1891; a member of the Medical Society of the State of Pennsylvania; consulting surgeon to the Franklin Public Hospital; died at his home in Franklin, July 12, from diabetes, aged 54.

John M. Crawford, M.D. Columbus (Ohio) Medical College, 1877; for thirty-five years a practitioner of Minerva, O., but for the last three years a resident of Cleveland; a veteran of the Civil War; died at the Glenville Hospital, Cleveland, July 10, aged 67.

Benjamin F. Ray, M.D. Western Reserve University, Cleveland, 1870; a member of the hospital corps during the Civil War; for thirty years a practitioner of Geauga County, O.; died at the home of his daughter in Cleveland, July 13, aged 68.

William L. Pollock, M.D. Jefferson Medical College, 1871; a member of the Iowa State Medical Society and formerly president of the Central District Medical Association; died suddenly at his home in Boone, July 15, from heart disease, aged 60.

Edward H. Clarke (years of practice, New York, 1845); who practiced for about three years in that state and then went into other business; died at the home of his daughter in Morristown, N. J., January 13, from chronic bronchitis, aged 87.

Charles Archelaus Coolidge, M.D. Dartmouth Medical School, Hanover, N. H., 1856; for more than fifty years a practitioner of Canton, Me.; died at the home of his son in North Waterford, Me., July 1, from cerebral hemorrhage, aged 81.

William L. Stevens, M.D. Medical College of Ohio, Cincinnati, 1882; of Arco, Idaho; died in Blackfoot, Idaho, in March, from cerebral hemorrhage, while on his way to Ogden to take treatment for cancer of the stomach, aged about 58.

William Thomas Jones, M.D. Jefferson Medical College, 1904; of Natchez, Miss.; died at the sanitarium of Dr. Charles Chamberlain in Natchez, July 9, from septicemia following an abscess of the shoulder, aged 36.

Alfred Samuel Bassinger, M.D. Starling-Ohio Medical College, Columbus, Ohio, 1911; of Bluffton, Ohio; who received his license to practice July 5, was drowned while bathing in Lake Erie, near Lakeside, July 7, aged 29.

Thomas Hodge Jones, M.D. Eclectic Medical Institute, Cincinnati, 1879; a veteran of the Civil War; for several years superintendent of schools of Laclede County, Mo.; died at his home in Springfield, April 24, aged 70.

John W. Dillard, M.D. University of Virginia, Charlottesville, 1875; formerly of Chandler, Okla.; died at his home in Bristow, Okla., February 2, from peritonitis, following an operation for appendicitis, aged 54.

Daniel Free (license, Ohio, years of practice, 1896); for forty-five years a practitioner of the state and said to have been the oldest physician in Marion County, died at his home in Green Camp, July 12, aged 78.

Richard E. Jones, M.D. Miami Medical College, Cincinnati, 1856; a member of the American Medical Association, and a life member of the Ohio State Medical Association; president of the First National Bank of Lima; died at his home in Gomer, April 24, aged 76.

John G. Noles, M.D. Louisville (Ky.) Medical College, 1907; of Dubberly, near Ringgold, La.; died in a sanitarium at Shreveport, La., May 9, five days after an operation for intestinal obstruction, aged 32.

Fernandes Todd, M.D. University of Pennsylvania, Philadelphia, 1875; a member of the Medical Society of the State of Pennsylvania; died at his home in Houtzdale, May 17, from pneumonia, aged 61.

Samuel L. Tyner, M.D. Rush Medical College, 1870; a member of the Indiana State Medical Association; formerly clerk of Warrick County; died at his home in Boonville, July 14, from cerebral hemorrhage.

George L. Andrew, M.D. New Medical Institution, New York City, 1845; chief inspector of the U. S. Sanitary Commission during the Civil War; died at his home in La Porte, Ind., July 19, aged 89.

Charles Lanning, M.D. State University of Iowa, College of Homeopathic Medicine, Iowa City, Ia., 1885; died at his home in Morrison, Ill., July 5, from cerebral hemorrhage, aged 68.

David W. Else, M.D. Kansas City (Mo.) Hospital Medical College, 1885; at one time coroner of Cloud County, Kan.; died at his home in Concordia, July 2, from heart disease, aged 70.

Ezra R. Spencer, M.D. University of Pennsylvania, Philadelphia, 1870; a member of the American Medical Association; died at his home in Doylestown, O., July 13, aged 73.

John A. Morrison, M.D. Cincinnati College of Medicine and Surgery, 1875; for many years a practitioner of Montpelier, Ind.; died at his home in Jackson Township, July 11, aged 62.

Gerhard Carl Benneke, M.D. Rush Medical College, 1911; who was about to go to Alaska as a medical missionary; was drowned in Rock River, near Watertown, Wis., July 4, aged 27.

Thomas Hillery West, M.D. University of Pennsylvania, Philadelphia, 1870; a Confederate veteran; died at his home in Keyser, W. Va., July 12, from heart disease, aged 69.

Abram Morrison, M.D. University Medical College of Kansas City, Mo., 1897; a member of the Arizona Medical Association; died at his home in Tucson, July 8, aged 40.

Clarence Alphonso Crain, M.D. Kentucky School of Medicine, 1894; a member of the Kentucky State Medical Association; died at his home in Helena, April 5, aged 41.

Henry Rock Connor, M.D. Bellevue Hospital Medical College, 1894; assistant physician to the French Hospital, New York City; died at his home, July 7, aged 54.

Lyman H. Jones, M.D. Atlanta (Ga.) Medical College, 1878; for many years a practitioner of Atlanta; died at his home in Atwood, Ga., July 1, aged 60.

Joseph H. Baxter, M.D. Bellevue Hospital Medical College, 1884; for forty years a practitioner of Columbus, Kan.; died at his home in that city, July 14, aged 63.

Lewis Freeman Worthley, M.D. New York University, New York City, 1881; died at his home in Altoona, Pa., July 6, from cerebral hemorrhage, aged 70.

Job Theophilus Edwards, M.D. Leonard School of Medicine, Raleigh, N. C., 1906; died at his home in Connellsville, Pa., July 9, from tuberculosis, aged 34.

Lon O. Pickens, M.D. University of Nashville, Tenn., 1907; died at his home in Ashland, Okla., July 4, from the effects of an accidental gunshot wound.

Archibald Nesbitt Johnson, M.D. University of Michigan, Ann Arbor, 1862; formerly of Cumber; died at his home in Detroit, July 8, aged 75.

Frank M. Brewer, M.D. Bennett Medical College, Chicago, 1885; died at his home in Fort Atkinson, Wis., July 4, from heart disease, aged 48.

Thomas B. Welsh, M.D. Cleveland Homeopathic Medical College, 1898; died in his office in Pittsburg, Pa., July 6, aged 41.

James Edward Keating, M.D. Harvard Medical School, 1879; died at his home in Natick, Mass., July 5, from heart disease, aged 64.

V. 5
1911

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

EN-AR-CO OIL

A Poisonous Nostrum for Curing Rheumatism and Making Hens Lay

Before the passage of the federal Food and Drugs Act, the most insidiously dangerous poisons could be sold to the public in the form of "patent medicines" without the slightest warning or indication of their deadly character. The passage of that act made it obligatory on the "patent medicine" venders to disclose the presence of certain specified drugs if such entered into the composition of their nostrums. The number of drugs whose presence must thus be declared is small. Some of the most virulent poisons need not be specified and their presence can be hidden in a "patent medicine" with impunity. Strychnin, arsenic and prussic acid are but three of a large number of dangerous drugs whose presence it is not necessary to declare and which may enter into the composition of "patent medicines" without any warning being given to the purchaser.

Inquiries have been received concerning the composition of a nostrum known as En-Ar-Co Oil. The label on the bottle of this preparation states that "the popular En-Ar-Co Oil" was "known for a quarter of a century as 'the wonderful Japanese Oil.'" It is further stated that "this style label [was] adopted to meet requirements of Food and Drugs Act." One wonders whether the exploiters of En-Ar-Co Oil found it necessary after the passage of the Food and Drugs Act, to discard the name "Japanese Oil," because it is not a Japanese oil. The pure food law, while permitting falsehoods regarding the curative effects of nostrums, prohibits untruths regarding the place of origin.

Accompanying the package of En-Ar-Co Oil is a circular in which it is stated concerning the nostrum:

"A medicine that is equally valuable for Man, Beast or Fowl is something outside the general run, and should attract the attention of all classes accordingly."

"We do not claim it to be infallible, or to cure everything, but we do believe that it comes nearer to accomplishing all this than any other known remedy; for proof of this read list of diseases, printed hereon, which it relieves and the testimonials published here and elsewhere."

The list of diseases referred to is large enough to make the gullible feel that he is getting his money's worth. Such widely different pathologic conditions in human beings as asthma, "toe itch," fever sores, rheumatism and insect bites are said to yield to the curative power of En-Ar-Co Oil, while in the lower animals, hog cholera, spavin, distemper and roup may be made to disappear. From the testimonials, it appears that lockjaw and snake bite also are easily conquered by this wonderful remedy. Most important of all:

"En-Ar-Co Oil is also excellent for making hens lay."

An original package of En-Ar-Co Oil was examined by the Association's chemists, who report as follows:

LABORATORY REPORT

Qualitative tests demonstrated the presence of ethyl alcohol, iso-amyl alcohol (the chief constituent of "fusel oil"), capsicum and a volatile oil of a greenish color and eucalyptus-like odor, but which was not identified. Neither cantharides nor ginger could be found and alkaloids were absent. While no exact separations were made it is concluded that about 90 per cent. of the preparation consists of "fusel oil."

From the results of this cursory examination it appears that a mixture of "fusel oil" and tincture of capsicum with a little oil of eucalyptus added would have properties similar to those of the "Wonderful Japanese Oil."

Iso-amyl alcohol is, according to different investigators, from ten to twenty times as poisonous[1] as ethyl (grain) alcohol. A number of serious and some fatal cases of poisoning from the use of "fusel oil" have been reported.[2] If it be remembered that the extraordinarily poisonous and irritating properties of freshly distilled liquors are largely due to the small quantities (usually less than 1 part in 1,000) of "fusel oil" which they contain, it can be seen that a 10-drop dose of this mixture (about 9 drops of which are "fusel oil") might be distinctly poisonous to an adult. "Fusel oil" is not employed in the rational practice of medicine, although it is said to have been used occasionally by the ignorant as a local application for rheumatism. Its employment in a "patent medicine" is contrary to the general rule that nostrums usually contain only well-known remedies.

Whatever the value of such a concoction for relieving "toe itch" or for "making hens lay" may be, its use by human beings as an internal remedy cannot be too strongly condemned and its sale without a poison label should be prohibited.

1. Dujardin-Beaumetz and Audige: Compt. rend., 1875, lxxxi, 192; Rabuteau: Ibid., 631; Richardson: Suppl. Med. Times and Gaz., 1869, ii, 705; Frankel: Die Arzneimittel-Synthese, ed. 2, 133.

2. Ord: Lancet, 1889, ii, 1225; Swain: Brit. Med. Jour., 1891, i, 903; Rodzevitch: Russk. Med., 1893, xviii, 249, 264; Futcher: Am. Med., 1901, ii, 210.

Correspondence

Postgraduate Work for Americans at Budapest

To the Editor:—I thought it might be interesting to some of the readers of THE JOURNAL to hear something about the advantages and the opportunities offered for study and postgraduate work here in Budapest on the "beautiful blue Danube," about 150 miles southeast of Vienna. Budapest has a population of nearly one million, and is becoming celebrated for the number and character of its educational institutions.

The Hungarians have made wonderful progress in the last thirty years; especially have they shown material advancement in the science and art of medicine and surgery. Their hospitals are nearly all modern buildings, beautifully situated as regards light and air, with pleasant surroundings and well equipped with the latest and best appliances, for *x*-ray, laboratory, pathologic and clinical work.

Of the two gynecologic hospitals which are connected with the Royal Hungarian University I can speak from practical experience, as I have been working as clinical assistant in one of them for the past two months. This hospital contains 150 beds, half of the building being devoted to gynecologic cases and the other half to obstetrics. There is a separate building for septic cases and also one for dispensary cases. In this latter department from forty to fifty patients are examined and treated every morning from 8 till 11.

In the obstetric division from six to eight women are confined daily, and one can see here in a short time various abnormalities of the pelvis and any number of difficult labor cases, ranging from forceps operations to extraperitoneal Cesarean sections. This latter operation is performed where the patient has been examined *per vaginam* for two weeks previous to delivery, as they believe that where there is the slightest danger of infection it is not wise to open the peritoneum.

For any physician wishing to do postgraduate work in gynecology or obstetrics, this place has a great many advantages over other large European cities. Every opportunity is afforded one to make the examinations, treat the patient and follow the case from beginning to end. The supply of material is unlimited and the number of physicians coming here for work is not so large as in some of the other medical centers, so that one can have plenty of opportunity to work along the lines he most desires. Emergency cases are treated when practicable at the homes of the patients, and at least twelve to fifteen new patients are attended to daily. Even in the poorest of homes wonderful results are obtained and seldom is there an infection following confinement or miscarriage, as the asepsis is the most thorough and rigid that could be put into practice.

Another advantage is the ability of the assistants to speak English, and besides their native language they also speak

French and German. With the aid of German, one would have no difficulty in making himself understood, as the nurses also speak German. Dr. Scipiades, the adjunct professor, has traveled extensively in the United States, is well acquainted with some of our best surgeons and is conversant with the methods used in some of our large hospitals. Docent Frigyesi, who will become a professor next year, has been stationed in this hospital for the past ten years. He speaks English well and is a kindly and courteous physician, ever willing and ready to demonstrate the gynecologic cases. These two men do the bulk of the operating work and display considerable skill and precision combined with directness and rapidity of operating. Assistant Schmidlechner, who has charge of the bacteriologic and out-patient department, speaks excellent English, having lived in London a number of years. One can under his direction obtain a valuable experience in examining the innumerable cases that come under his charge. Assistant Mansfield, who is a relative of the late actor, Richard Mansfield, has charge of the obstetric department and is also extremely courteous and willing at all times to demonstrate the cases in his division. Professor Tauffer, chief of the clinic, is a well-known physician, having been assistant to Professor Hegar of Freiburg, and was last month elected one of the presidents of the gynecologic congress held at Munich.

Everything is done here for the comfort and enlightenment of the visiting physicians that possibly could be done, and it is a great proof of the catholicism of medical science which one finds so well demonstrated in this far away eastern country. I might add that the best season for work here is between September and June.

FRANK MCMORROW (of Syracuse, N. Y.).

The Introduction of the Ophthalmoscope Into This Country

To the Editor:—In "A Tribute to Herman Knapp," you state editorially in THE JOURNAL, May 20, 1911, in substance that Dr. Knapp first introduced the ophthalmoscope into this country in 1868. This is erroneous. Whatever credit is attached to the first introduction of that instrument into this country belongs to the late Dr. E. Williams of Cincinnati.

In 1852, Dr. Williams determined to devote his life to the specialty of ophthalmology and went to Europe to perfect his education along that line. Just at that time the ophthalmoscope first came into use and Dr. Williams had the rare good luck to be able to study its uses along with Des Marres, Graefe, Arlt, Jaeger and others in Germany.

Early in the year 1854, he introduced the ophthalmoscope into London. At that time this instrument was unknown in England, so far as its uses were concerned. While in London, Dr. Williams wrote and published a full account of the new instrument in the *Medical Times and Gazette*, July 1, 1854. This article was the first ever published in English on that subject. The heading was: "The Ophthalmoscope; the Principles on Which it is Based—the Manner of its Application—and its Practical Advantages; with a Report of Some Cases."

I have a copy of this article. The description of the instrument, simple as it was, was very complete and the report of the three cases of retinal detachments would be practically up to date now, except that he called the cases "dropsy of the retina." The old English writers (Mackenzie and Lawrence) quoted extensively from this article in their books, published soon after the article appeared.

In the spring of 1855, Dr. Williams returned to Cincinnati and brought with him the first ophthalmoscope ever brought to this country, and from that time on he used the ophthalmoscope whenever he had occasion.

When I went to Cincinnati in the fall of 1860 to begin the study of medicine, Dr. E. Williams, my uncle and preceptor, and the first educated man in this country to make a specialty of ophthalmology, was using the ophthalmoscope right along and had been doing so ever since the spring of 1855.

From the above you can readily see that Dr. Herman Knapp did not introduce the first ophthalmoscope into this country.

A. D. WILLIAMS, Bedford, Ind.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

MENTAL HEALING

To the Editor:—Please refer me to some articles treating the subject of mental healing, especially as practiced by religious sects, from a physician's point of view.

R. E. TEALL, Palco, Kan.

ANSWER.—A recent work on the subject is Cutten's "Three Thousand Years of Mental Healing." In addition the articles listed below contain more or less information on the subject of mental healing.

Mitchell, J. K.: The Emmanuel Movement, *Am. Jour. Med. Sc.*, December, 1909; abstr. in THE JOURNAL, Jan. 1, 1910, p. 79.
Church, A.: Mind Cures in General and the Emmanuel Movement in Particular, *Jour. Mich. State Med. Assn.*, December, 1909; abstr. in THE JOURNAL, Oct. 9, 1909, p. 1220.
Collins, J.: The Emmanuel Movement, THE JOURNAL, Jan. 2, 1909, p. 87.
The Medical Profession and the Emmanuel Movement: Correspondence, THE JOURNAL, Jan. 23, 1909, p. 314.
Symposium on Psychotherapy, THE JOURNAL, March 13, 1909, p. 916. These articles appeared in full in the *Illinois Medical Journal*, May, 1909.
Hilscher, S. S.: The Physician's Relation to Mental-Healing Systems and Methods, *Jour. Kan. Med. Soc.*, June, 1908; abstr. in THE JOURNAL, May 30, 1908, p. 1823.
Psychotherapy and Religion, Editorial, THE JOURNAL, Dec. 26, 1908.
Mental Healing, Editorial, THE JOURNAL, March 28, 1908, p. 1042.
Fads in Mental Healing, Editorial, THE JOURNAL, June 13, 1908, p. 1987.
Religious Therapeutics, Editorial, THE JOURNAL, April 4, 1908, p. 1124.
Fallows: Religious Psychology, *Chicago Med. Recorder*, March, 1908; abstr. in THE JOURNAL, May 16, 1908, p. 1652.
Cabot, R. C.: Mind Cure; Its Service to the Community, *Detroit Med. Jour.*, August, 1907; abstr. in THE JOURNAL, Sept. 14, 1907, p. 908.

BUTTERMILK IN INTESTINAL PUTREFACTION

To the Editor:—Will you please supply references to the literature concerning the value of buttermilk, either supporting or opposing the claim of Metchnikoff that the lactic acid bacillus tends to decrease the production and absorption of putrefactive bodies from the large intestine? T. R. S.

ANSWER.—Following is a list of articles which have appeared in THE JOURNAL, or have been abstracted. Reference is also given to an article in the *American Journal of Diseases of Children* on the *Bacillus acidophilus*, which may be of interest in this connection:

Ritter, J., and Buttermilch, W.: Buttermilk for Infants with Acute Indigestion, *Berl. klin. Wchnschr.*, Nov. 28, 1910; abstr. in THE JOURNAL, Jan. 14, 1911, p. 160.
Buttermilk Therapy, THE JOURNAL, July 24, 1909, p. 304.
Koeppe, H.: Buttermilk in Infant Feeding, *Deutsch. med. Wchnschr.*, June 17, 1909; abstr. in THE JOURNAL, July 31, 1909, p. 421.
Buttermilk Therapy and Milks as Foods, Query and Minor Note, THE JOURNAL, Aug. 14, 1909, p. 576.
Strauch, A.: Buttermilk as Infant Food, *Med. Rec.*, New York, March 30, 1907; abstr. in THE JOURNAL, April 13, 1907, p. 1297.
Judson, C. F., and Clock, R. O.: Modified Buttermilk in Infant Feeding, *New York Med. Jour.*, Apr. 30, 1907; abstr. in THE JOURNAL, May 4, 1907, p. 1548.
Carpenter, H. C.: Buttermilk Feeding, THE JOURNAL, May 11, 1907, p. 1576.
Allen, F. H.: Buttermilk as a Food for Infants, *Ann. Gynec. and Pediat.*, August, 1907; abstr. in THE JOURNAL, Sept. 7, 1907, p. 879.
Herter, C. A.: The Manifestations of Saccharo-Butyric Intestinal Putrefaction THE JOURNAL, Dec. 14, 1907, p. 1965, and Dec. 21, p. 2077.
Rotch and Kennedy: A Preparatory Study of the Bacillus Acidophilus in Regard to Its Possible Therapeutic Use, *Am. Jour. Dis. Child.*, July, 1911, p. 30.

HISTORY OF MEDICINE

To the Editor:—In an editorial, July 1, 1911, p. 28, you discussed "Medical History Clubs," and I think you are quite right in your views of the subject. For some time I have been thinking of writing you for as complete a list of books on the history of medicine and surgery, both in general and particular, as you could furnish.

J. L. MILLER, Thomas, W. Va.

ANSWER.—A list of books on the history of medicine was published in THE JOURNAL (May 8, 1909, page 1517) and also a separate list of books on the recent history of surgery.

Since that time another has come out that ought to be mentioned, namely, "The History of Medicine," by Max Neuburger, in two volumes, published by the Oxford University Press, London, at $9.

V. 5
1911

CONTRACT PRACTICE

To the Editor:—Please define for me what is meant by the term "contract practice" as it is used at the present day in reference to a certain phase of the practice of medicine.

A. B. SCHNADER, Mount Carmel, Pa.

ANSWER.—See THE JOURNAL, department of Medical Economics, July 8, 1911, p. 145.

REQUEST FOR CIRCULARS ON HARMON-JACKMAN BOOK

To the Editor:—Any physician receiving circulars advertising a book published by one W. J. Jackman and purporting to contain an introductory chapter by me will confer a favor by sending to me such circulars, with the envelope in which they were received.

G. FRANK LYDSTON, M.D., Chicago.

"ROENTOGRAPHY"

To the Editor:—Your correspondent (July 1, p. 39) has cut the Gordian knot of *x*-ray nomenclature which, as the *Interstate Medical Journal* of June, 1911, states, is still open to discussion after fifteen years of the universal use of this physical agent. Its editorial comments on the nomenclature promoted by the American Roentgen Ray Society that "it would load our language with polysyllables which are more or less ridiculous in the English language." By dropping enough of the syllables to make their terms available, as your correspondent suggests, the Gordian knot is cut and enough of Roentgen's name is left for individualization of the technic and doing honor to the scientist, while "roentography," "roentograph" and "roentogram" step into line with photography, photograph, radiography, etc.

F. C.

The Public Service

Medical Department, U. S. Army

Changes for the week ended July 15, 1911.

Love, Joseph W., M.R.C., granted one month and fifteen days' leave of absence.

Lyster, William J. F., major, ordered to proceed from Fort Oglethorpe, Ga., to San Antonio, Texas, for duty with 11th Cavalry.

Fauntleroy, P. C., major, ordered to proceed to Camp Douglass, Wis., for duty at encampment organized militia of Wisconsin, from July 8 to 28, 1911.

Birmingham, H. P., colonel, Fisher, Henry C., lieut.-colonel, and Bartlett, C. J., major, promoted to rank from June 7, 1911.

Bernheim, Julien R., dental surgeon, ordered to proceed from Fort Sheridan, Ill., to Columbus Barracks, Ohio, for temporary duty.

Millikin, John D., dental surgeon, will, after arrival at San Francisco and on expiration of leave of absence, proceed to Columbus Barracks, Ohio, for duty at that station.

Fisk, Owen C., lieut., relieved from treatment at Hot Springs, Ark., and ordered to proceed to Walter Reed General Hospital, Takoma Park, D. C., for treatment.

Ruddy, William P. J., M.R.C., relieved from temporary duty at Washington Barracks, D. C., and to return to Fort Myer, Va.

Gentry, Ernest R., lieut., ordered to San Antonio, Texas, for temporary duty in Department of Texas.

Freeman, Paul L., captain, relieved from temporary duty at San Antonio, Texas, and to return to Fort Riley, Kan.

Ferenbaugh, Thomas L., lieut., now at San Antonio, Texas, will report to commanding general, Department of Texas, for temporary duty.

Craig, Charles F., captain, granted thirty days' leave of absence about Aug. 1, 1911.

Chambers, William H., dental surgeon, reports departure from duty at West Point, N. Y., for duty at Army General Hospital, San Francisco.

Stone, Frank P., dental surgeon, returned to Army General Hospital, San Francisco, from temporary duty at Fort Rosecrans, Cal.

Hess, John H., dental surgeon, left Fort McDowell, Cal., on thirty days' leave of absence.

Berry, Harry R., first-lieut., will be relieved from duty, maneuver division, San Antonio, Texas, July 24, and return to former station, Fort Benjamin Harrison, Ind. Granted leave for one month after arrival at that post.

Davis, Arthur O., first-lieut., granted leave of absence for one month on arrival at Fort Oglethorpe, Ga.

Divins, George C., first-lieut., will be relieved from duty with Troop E, 3d Cavalry, at Minera, Texas, July 1, and will proceed to San Perdyce, Texas, reporting to commanding officer, Troop L, 3d Cavalry.

Brown, Polk D., M.R.C., relieved from duty, Minera, Texas, and ordered to return to Fort Sam Houston. Granted leave of absence for one month from July 2.

Aydelotte, John T., first-lieut., granted leave of absence for one month on surgeon's certificate of disability.

Gunckel, George L., dental surgeon, left Fort Barrancas, Fla., en route to Fort Dade, Fla., for temporary duty.

Billingsley, C. C., captain, reports departure from Washington, D. C., on fourteen days' leave of absence.

Owen, Leartus J., captain, ordered to Port Huron, Mich., Aug. 9 to 18, 1911, as inspector-instructor of militia.

Billingsley, Charles C., captain, having completed duty, this city, will return to proper station on expiration of leave of absence granted him.

Darby, Taylor E., first-lieut., granted leave of absence for fourteen days on his relief from temporary duty, Fort McPherson, Ga.

De Laney, Matthew A., major, will report in person to the surgeon-general of the Army for assignment to duty as attending surgeon in this city.

Russell, Frederick F., major, will proceed to Kingston, N. Y., to deliver an address on typhoid vaccination at annual meeting, Third District Branch Medical Association, New York, and then return to proper station, this city.

Thomason, Henry D., captain, will proceed to Port Huron, Mich., about Aug. 9, 1911, for consultation with adjutant general, State of Michigan, for reorganization medical corps and sanitary troops of that state.

Smith, Allen M., lieut.-colonel, on board to meet at Fort Sam Houston, August 1, to examine applicants for commission in volunteer force.

Taner, Francis M. C., major, on board to meet at Fort Sam Houston, Texas, August 1, to examine applicants for commission in volunteer force.

Barber, John R., Worthington, Joseph A., Ashford, Mahlon, Huber, Edward G., Lambie, John S., Jr., Tasker, Arthur N., Snyder, Howard McC., Cowles, Calvin D., Jr., McKinney, Garfield L., and Phillips, Hiram A., captains, promoted to rank from June 13, 1911.

Poust, Luther R., M.R.C., reports for temporary duty at Fort Hamilton, N. Y.

Boens, Charles J., M.R.C., ordered to Fort Ontario, N. Y., for temporary duty. Reported at Fort Ontario same date.

The following named officers will proceed at the proper time to camps of organized militia, as specified below, for duty as instructors and inspectors: Hess, Louis T., major, ordered to Mount Gretna, Pa., July 8-15; Robbins, Chandler P., major, ordered to Frederick, Md., July 12-22; Williams, Allie W., captain, ordered to Niantic, Conn., July 10-15; Hopwood, Lucius L., captain, ordered to Basic City, Va., July 17-23.

Miller, E. W., captain, left Fort Ontario, N. Y., en route to Camp Kanawah, W. Va., militia, for duty as inspector-instructor.

McAfee, L. B., lieut., left Hot Springs, Ark., on ten days' leave of absence.

Hess, Louis T., major, left Fort Hamilton, N. Y., en route to Camp Mount Gretna, Pa., as sanitary inspector.

Willisma, A. W., captain, left Fort H. G. Wright, N. Y., en route to Niantic, Conn., as instructor sanitary troops.

Burnett, Thomas W., M.R.C., reported for temporary duty at Fort Slocum, N. Y.

Baker, C. R., M.R.C., reported for duty at Fort Hancock, N. J.

Brown, Ira C., M.R.C., is relieved from duty at Fort Douglas, Utah, on arrival of 15th Infantry and will return to Fort Lawton, Wash.

Ashford, Bailey K., major, is relieved from present duties on assumption of duties as advisor of the governor of Porto Rico.

Owen, L. J., captain, ordered to proceed at proper time to camp organized militia, at Port Huron, Mich., for duty as inspector instructor, Aug. 9 to 18, 1911.

Cook, George W., lieut., granted leave of absence for one month.

Miller, Reuben B., major, promoted to with rank from June 21, 1911.

Craft, Edgar D., first-lieut., appointed with rank from Feb. 17, 1911.

Medical Corps, U. S. Navy

Changes for the week ended July 22, 1911.

Geiger, A. J., P. A. surgeon, detached from the naval hospital, Mare Island, Cal., and ordered to the *Colorado*.

Hayward, A. R., P. A. surgeon, detached from the *Colorado* and ordered to the *South Dakota*.

McGuire, L. W., asst.-surgeon, detached from the *South Dakota* and ordered to the navy recruiting station, Portland, Ore.

Dickson, S. H., medical director, transferred to the retired list from July 20, 1911; detached from the marine barracks, Washington, D. C., and ordered home.

Kelley, H. L., P. A. surgeon, detached from the *Yorktown* and ordered to duty at the naval hospital, Mare Island, Cal.

Munger, C. B., P. A. surgeon, detached from the *West Virginia* and ordered to the *California*.

Camerer, C. B., asst.-surgeon, detached from the *California* and ordered to the *Yorktown*.

Alfred, A. R., surgeon, ordered to the navy-yard, Norfolk, Va.

Kennedy, R. M., surgeon, ordered to duty at the Naval Medical School, Washington, D. C.

Rodman, S. S., surgeon, orders of May 19 revoked.

Rennie, W. H., P. A. surgeon, detached from the naval hospital, Boston, and ordered to the *Tacoma*.

Jenkins, H. E., asst.-surgeon, detached from the *Montana* and ordered to the *Ohio*.

Bishop, L. W., P. A. surgeon, detached from the *Tacoma* and ordered to the *New Jersey*.

Thomas C. G., asst.-surgeon, orders of May 19, revoked.

U. S. Public Health and Marine-Hospital Service

Changes for the seven days ended July 19, 1911:

Wertenbaker, C. P., surgeon, detailed to represent the Service at a meeting of the Association of Surgeons, Atlantic Coast Line Railroad, to be held at Norfolk, Va., July 25-26.

Brown, R. W., surgeon, granted one month's leave of absence to be taken when he can be absent without detriment to the service.

Oakley, J. H., surgeon, directed to proceed to New York and return to station on board steamship carrying immigrants.

Mathewson, H. S., P. A. surgeon, granted two months' leave of absence from Aug. 1, 1911.

Von Ezdorf, R. H., P. A. surgeon, directed to proceed to New York via the Bureau, on special temporary duty.

Moore, Dunlop, P. A. surgeon, granted seven days' additional leave of absence from July 17, 1911.

Foster, A. D., P. A. surgeon, granted one month's leave of absence from Aug. 2, 1911.

Frost, W. H., P. A. surgeon, directed to proceed to Little Rock, Ark., on special temporary duty.

de Valin, Hugh, P. A. surgeon, granted seven days' leave of absence from June 28, 1911, on account of sickness.

Earl, F. D., acting asst.-surgeon, granted fifteen days' leave of absence from July 14, 1911.

Hicks, W. R., acting asst.-surgeon, granted 30 days' leave of absence from July 10, 1911.

Markoe, W. W., acting asst.-surgeon, granted twenty-four days' extension of leave on account of sickness, from June 1, 1911.

Watson Harry J., acting asst.-surgeon, granted thirty days' leave of absence from Aug. 14, 1911.

Herrick, Dr. A. W., appointed acting asst.-surgeon for duty at Bay City, Mich., July 11, 1911.

Medical Economics

PERSONAL LIBERTY AND SCHOOL INSPECTION

That organization created primarily to fight the American Medical Association on account of its crusade against quackery and frauds in medicines—the National League of Medical Freedom—has been circulating throughout the country printed matter, mimeographed letters, circulars and other campaign literature (?) attacking the medical inspection of school children. This matter has been sent principally to school superintendents with a view to prejudicing them against the proper inspection of school children. An accompanying letter asks the school superintendent to protest against school inspection in his city. This circular letter has called out at least one reply in which the writer does not hesitate to speak his mind. The following by the superintendent of schools of one of the large New England cities has been reprinted by the Russell Sage Foundation, Department of Child Hygiene:

Dear Sir: Your letter and pamphlets relating to compulsory medical inspection are received.

We have medical inspection in our city, though usually not compulsory, parents being allowed in most cases to have a child exempt on request. In a few cases not only inspection but treatment is compulsory, horrible as such a condition may appear. We found over 400 cases of pediculosis last year, for instance, and actually forced parents to kill or remove the parasites. Last week we found a little girl with a large abscess in the ear. In the opinion of three ear specialists her life was in great danger; without treatment, indeed, they considered it probable that the child would soon die. The child has no father. The mother refused to have anything done. Under threat of arrest she allowed the child to go to a hospital, where she is likely to come out all right, though not yet out of danger. I have just come within an hour from a school where I found a little girl of 5 with an ulcer in the eye. The parents had been informed and refused to do anything. The child's condition was pitiable, not to use a stronger word. I shall have the case inspected by the best men in the city, and if they report the need to be as great as it appears I shall actually try to force not only examination, but treatment. In 1910 we found a dozen cases of tuberculosis. I feel sure that our discovery saved the lives of five. Two have gone to a free home for consumptives in Dorchester, where, as per their letters, they are "growing fat." Three have been sent to a state sanitarium, where all are improving. Five went to a tuberculosis camp, where all were benefited. All were cared for in some way.

Two children were found with hip disease, bad cases. Their parents did not know that help was possible. When told, they gladly cooperated in sending the children to a hospital, where after nearly a year of treatment, both bid fair to entirely recover ability to walk. These are a few of the more striking cases in which I am sure we saved life, restored health, gave power to work, relieved pain and added happiness. In all we secured treatment for over 1,100 children.

And strange as it may seem, parents generally like it! Many of them are very earnest in their expressions of gratitude. A few objected to interference with their personal liberty to keep their children as lousy as they pleased and the mother of the child with an ulcer in the ear swore a little at the officer who appeared before her with a warrant charging cruelty to a child, but they are the rare exceptions. Generally parents, not having read your pamphlets and not realizing how they are being abused, approve enthusiastically.

Under the circumstances, therefore, I trust you will excuse us if we keep right on sending our school physicians and school nurse "about doing good" in both schools and homes. Seriously, I would not dare, for my life, to stop this magnificent work. Stopping, I could face neither my God nor myself.

A more effective reply to the objections raised against school inspection could not well be imagined. If the objectors are sincere, this letter is certainly convincing. If they are not sincere, but are fearful lest the work of saving the lives and health of thousands of American school children will imperil their business profits, they will speedily find themselves beneath the contempt of the American people.

It will be difficult to convince the public that in order to secure personal liberty it is necessary to allow 400 school children in one town to suffer from pediculosis. If the members of the National League of Medical Freedom desire the right to cultivate this peculiar form of uncleanness they are quite at liberty to do so provided those compelled to associate with them have no objection, but they have no right, nor will the American public sustain them in demanding the right, to put a stop to the use of any and every means at the disposal of advanced medical science to protect the lives and health of our school children.

COMMUNISTIC OBSTETRIC ATTENDANCE

The municipality of Zurich, Switzerland, has decided to allow the people to vote on the proposition to supply medical assistance and lay attendance free of charge in all obstetric cases in the city, at a maternity or in the home. The only provisions are that the woman must have resided at least a year in the city and the family income not be over $400.

In a communication in the *Correspondenz-Blatt für Schweizer Aerzte*, Häberlin explains why the two medical members of the city council protested against the plan or, at least, against certain features of it. In the first place, he says, the plan is socialism rather than along the lines of insurance. In the latter the recipient contributes something, however small, which principle of self-help for the weak rather than exclusion of his cooperation, is of extreme ethical and economic importance. The plan further conflicts with the present maternity and hospital arrangements with no corresponding advantages, and the expense is not borne by the agencies specially created for such purposes, the poor funds or the sickness insurance societies, but the entire populace is to be taxed for it, while less than a fourth will benefit by it.

The physicians further protested against the assumption that all women should be sent to an institution to be delivered, even though conditions are normal and they prefer to be confined at home. The physicians think that this extension of institutional treatment is based on an exaggerated idea of its advantages. The medical minority were instrumental, however, in having the original plan modified, so as to have even pathologic deliveries at home placed on the free list, a proposition not contemplated at first.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

CALIFORNIA: San Francisco, August 1. Sec., Dr. Charles L. Tisdale, 929 Butler Building.

NEBRASKA: Lincoln, August 9. Sec., Dr. E. Arthur Carr.

New Regulations in Wisconsin

At a meeting of the Wisconsin Board of Medical Examiners, held at Madison, July 11-13, 1911, it was decided that hereafter the board will demand documentary evidence of preliminary education in the form either of a high school diploma or a certificate signed by the proper examiner for the state from which the applicant comes showing that he has an equivalent education. Furthermore, the board will require that hereafter all conditions must be made up before the student is admitted to the junior year.

Probably the most important step taken by the board was the resolution providing that in all examinations hereafter practical tests will be required in physical diagnosis, chemical and microscopic urinalysis, bacteriology, pathology, histology and practical anatomy. It is the belief of the board that practical examinations will more clearly demonstrate the real knowledge, possessed by the applicant, of the fundamental problems of medicine.

The new officers and members of the board are: M. A. Barndt, M.D., president, Milwaukee; J. M. Beffel, M.D., secretary, Milwaukee; W. L. Thompson, D.O., Milwaukee; A. B. Bailey, M.D., Fennimore; C. W. Rodecker, M.D., Holcombe; F. Gregory Connell, M.D., Oshkosh; G. H. Ripley, M.D., Kenosha, and H. W. Abraham, M.D., Appleton.

Book Notices

A TREATISE ON DIAGNOSTIC METHODS OF EXAMINATION. By Dr. Hermann Sahli, Director of the Medical Clinic, University of Bern. Edited, with Additions, by Nathaniel Bowditch Potter, M.D., Assistant Professor of Clinical Medicine at Columbia University (College of Physicians and Surgeons), New York. Second Edition. Authorized Translation from the Fifth Revised and Enlarged German Edition. Cloth. Price, $6.50 net. Pp. 1229, with 471 illustrations. Philadelphia: W. B. Saunders Co., 1911.

The first edition of the translation of Sahli appeared some six years ago and received our favorable comment at that time. This second edition, a translation from the fifth German edition, is in substance the same as the first, though larger by about two hundred pages, which include much real revision and many additions. The chapter on hemodynamics has been completely rewritten; the various polygraphs and their values are discussed; and numerous additions have been made in the sections devoted to the examination of the stomach and the urine. The same is true of Sahli's excellent chapters on the blood and the nervous system. There are new cuts and two new plates. Altogether, the book is decidedly improved by these changes that help to bring it up to date and to make it more complete than the former edition. The failure to include a discussion of the Einthoven string galvanometer is perhaps excusable, because the use of this instrument is so recent and its value still so unsettled that definite conclusions concerning it cannot yet be stated. We feel concerning the Roentgen ray exactly as does the author; the technic is such that only an expert specialist can be expected to master it. But we believe that Sahli has not emphasized, as he might properly have done, the value of the Roentgen ray as a means of diagnosis in diseases of the heart, lungs, stomach, etc. While indorsing every word said as to the importance of retaining and increasing our skill in percussion and auscultation and while agreeing that much is learned from the history of the illness and from chemical and other laboratory examinations, we feel that one should not reject or minimize the help afforded by the different methods of examinations by the Roentgen ray. The technic may belong to the specialist, but the interpretation of the skiagraph, or orthodiagraph, should be made by the physician. What is said of the value of the Roentgen ray is good, but it is not enough. The American editor has added many pertinent notes and references. Some of the best of the illustrations are also his addition. We miss from the title-page of this edition the name of Dr. Francis Kinnicutt. As was said in the review of this work in 1905, it can be commended as one of the best books we have on the subject.

THE HUMAN ATMOSPHERE, OR THE AURA MADE VISIBLE BY THE AID OF CHEMICAL SCREENS. By Walter J. Kilner, B.A., M.B. Cantab. Cloth. Price, with screens, $9. Pp. 329, with 28 illustrations. New York: Rebman Company, 1911.

The assertions made in this book are so startling that one is puzzled to know whether the author has indeed made one of the epoch-making discoveries or is the victim of hallucinations, such as may affect even the scientific mind. Briefly, the author asserts that the human body is surrounded by a double aura or atmosphere which is ordinarily invisible to the naked human eye, but which rarely manifests itself to such favored beings as clairvoyants, and which can be made visible to anyone by a certain apparatus for sale with the book. The apparatus consists of thin glass cells filled with colored liquids. The aura thus seen is described as extending several inches beyond the body and as having generally a grayish-blue color. It is claimed to differ in appearance in different individuals, but there is said to be a general resemblance in that emanating from the members of a class, such as men, women or children. The auras of persons affected with disease are said to show characters which the author believes can be utilized in diagnosis. Aside from the aura proper, the author claims to find an etheric double next the body and has noticed the emission of rays from various parts of the body. Another method of examination, which is said to bring out details of importance consists in gazing at the aura or at the skin, with an eye temporarily color-blinded by gazing for some time at a card of a certain color. The complementary color will then be seen over the body and the aura, but, it is said, will be modified in brightness at certain points indicating possible effects of disease.

Such are the author's theory and claims. They are presented with conservatism, lack of knowledge and of sufficient observation to establish certain points being frequently admitted. The assertion that any one can verify these things with his own eyes gives the new claims a possibility of being readily established or refuted by others. The author disclaims all connection with occultism, although he has borrowed the terms used from theosophic works.

It does not seem, however, that the author has proceeded in quite the method which would be expected of a true scientist in recording observations which are to establish a discovery, which, if true, must be regarded as of immense importance. We find no indication of any attempt to confirm the facts by the testimony of other observers. The author is a resident of the great city of London, which contains many men of science certainly capable of verifying the author's claim had the opportunity been offered. Is it not strange that the author should have worked alone, that he should not have submitted his discovery to others before publishing it? Of course, we must grant every discoverer the right to present his findings to the world in his own way, but his apparatus could easily have been tested without impairing in any way his proprietorship in spectauranin screens.

It is suggested that the phenomena observed arise from illusion, due to the tiring of the eye by means of gazing at the light through the blue screen. The observer is cautioned against using the screen too much at first for fear an irritation of the eye may be caused. If, then, the material is capable of affecting the eye so powerfully, may it not be a question whether the shadows seen by such an irritated or tired eye have their origin in the play of the ether about the body viewed, or in irregular vibrations in the retinal or brain-cells of the observer?

While acknowledging that there are many things in heaven and earth not set down in our philosophy, the physician should be cautious about his ventures into the region of ethereal doubles, auras, fluidic members, astral bodies and the like.

MODERN DIAGNOSIS AND TREATMENT OF DISEASES OF CHILDREN. A Treatise on the Medical and Surgical Diseases of Infancy and Childhood, with Especial Emphasis on Clinical Diagnosis and Modern Therapeutics. For Practitioners and Students of Medicine. By Herman B. Sheffield, M.D. (Co-Author of "Practical Pediatrics"), Instructor in Diseases of Children at the New York Post-Graduate Medical School and Hospital. Cloth. Price, $4.50. Pp. 619, with illustrations. Philadelphia: F. A. Davis Co., 1911.

There is so much in this book that is bad that the good is almost entirely covered up. The style, which is suitable for a novel, not for a text-book on a scientific subject, may be judged of by such passages as "marvelously extricate themselves from the pangs of death," "verily considering the baleful acts," "one is amazed by the ever-swelling hordes of youthful humanity that have apparently escaped the clutches of ignorance—and death. Merciful Nature!" Water is spoken of as "heavenly beverage." Under the heading "Gastro-enterocolitis" the subject is handled just as the name indicates—namely a jumble of material that gives one no clear picture of any of the disturbances described. Very little help is afforded the student or practitioner by such statements as the following: "As patient improves a milder course of treatment is of course resorted to."

The pathology is especially weak; one might think that the book had been written fifty years ago if one were to judge by this bit of information: "The lymph in the lungs degenerates into fibrous tissue and caseous matter" (p. 272). Happily there are some redeeming features, as for instance the introductory chapter on the examination of the patient and the many excellent original photographs. The chapter on malformation is complete, the one on spasmophilia, however, just misses the mark because several members are added to the group that do not belong to it, and the others are considered separately as though they were not dependent on the same hypersensitiveness of the central nerve system. It is not in tetany alone that one finds Erb's and Chvostek's signs but also in laryngismus stridulus and eclampsia infantum.

A TEXT-BOOK OF MEDICAL DIAGNOSIS. By James M. Anders, M.D., Ph.D., LL. D., Professor of the Theory and Practice of Medicine and of Clinical Medicine, Medico-Chirurgical College of Philadelphia, and L. Napoleon Boston, A.M., M.D., Adjunct Professor of Medicine, Medico-Chirurgical College. Cloth. Price, $6 net. Pp. 1195, with 443 illustrations. Philadelphia: W. B. Saunders Co., 1911.

The authors of this volume have endeavored to encourage individualization in the examination of patients by a method of investigating the disease which brings the entire organism under consideration. A brief pathologic definition is given of each disease, after which the more prominent points in symptomatology are described, followed by an account of physical signs and laboratory diagnosis where applicable. In several cases there is also a section on differential diagnosis. Diseases receive the usual classification and preceding each division, such as diseases of the respiratory organs, stomach, etc., a brief account of the general methods of diagnosis is given, but the special signs are described under each disease. A careful examination shows that the methods are accurately and clearly given and the latest information is introduced. A peculiar feature, the utility of which may be questioned, is the presentation of numerous views showing the gait of patients in the various nervous affections. These pictures are entitled "moving pictures," but the motion must necessarily be provided by the imagination of the reader. This work has the decided advantage of combining in one volume the various methods of physical, clinical and laboratory diagnosis. This ought to be a useful corrective to the tendency to overestimate any of these various methods. We are surprised, however, to find that the descriptions of laboratory methods are by no means complete. For instance, there is no description of a method for the detection of sugar in urine and the chemical methods for examining urine for bile and blood are not described, but are dismissed with the statement that other methods are preferable. This must be regarded as a serious defect of the work as the addition of a few pages would have put the practitioner in possession of technical details for which he must now consult other text-books.

Nevertheless, this well-illustrated volume must be regarded as worthy of a place among the essential text-books for the medical practitioner.

FOOD AND THE PRINCIPLES OF DIETETICS. By Robert Hutchison, M.D., Edinburgh, F.R.C.P., Physician to the London Hospital. Third Edition. Cloth. Price, $3 net. Pp. 615, with illustrations. New York: William Wood & Co., 1911.

This book is so well known and has become so popular since it was first issued in 1900 that it is not necessary to discuss it in detail. In this edition it has been thoroughly revised and 67 pages have been added to it since it first appeared. One new chapter appears in this edition entitled "Some Dietetic 'Cures' and 'Systems.'" In it the nature and usefulness of a vegetarian and lacto-vegetarian diet, a purin-free diet, Dr. Hare's system, which is a proteid diet chiefly, an exclusive proteid diet, a salt-free diet and sour-milk diet are considered briefly but judiciously. Most of the additions to the volume are to the chapters and sections devoted to diet in diseases. Dr. Hutchison's book is certainly one of the best of the many which have been published during the last dozen years.

CESAREAN SECTION IN GREAT BRITAIN AND IRELAND. With Tables of 1,282 Cases of Cesarean Section by over 100 Living Obstetricians and Gynecologists in Great Britain and Ireland. By Amand Routh, M.D. (Lond.), F.R.C.P. (Lond), Obstetric Physician to Charing Cross Hospital, London. Being a Report on the Subject read at the V-me Congrès International d'Obstétrique et de Gynécologie at St. Petersburg in September, 1910. Cloth. Price, 5 shillings net. Pp. 233. London: Sherratt & Hughes, 34 Cross Street, Manchester, 1911.

This carefully compiled abstract of cases of Cesarean section, embracing all the cases that can be certified to by the operators, is preceded by a discussion of the indications for the operation, its relation to other operations that come in competition with it and the technic of the operation as performed in Great Britain. Reference to the most important literature is given and the names of the operators are listed. It will be seen that this report will be of value not only to all teachers of obstetrics but to practical obstetricians who need to keep informed on all important literature on this subject.

Medicolegal

Constitutionality and Construction of Medical Practice Act—What Constitutes Practice of Medicine and Surgery—Test—Chiropractor Violates Law

(State vs. Smith (Mo.), 135 S. W. R. 465)

The Supreme Court of Missouri, Division No. 2, affirms, in this case, a conviction of a chiropractor of the offense of treating and attempting to treat the sick and afflicted without first having obtained a license from the State Board of Health.

The statute (Missouri act of 1901) involved does not, in its title, the court says, violate the requirements of the state constitution. The act contains one subject, which is clearly expressed in the title. The title to the act is not "Medicine and Surgery," as the defendant asserted it to be in his brief. The words "Medicine and Surgery" are merely the caption. The title to the act is as follows: "An act to regulate the practice of medicine, surgery and midwifery, and to prohibit treating the sick and afflicted without a license, and to provide penalties for the violation thereof." The one "subject" of this act, within the meaning of the constitution, is, broadly speaking, public health.

Treating the sick is well within this subject, and is specifically covered by the title. It is unnecessary to cite the cases in this state on this proposition. This court has again and again, with patient repetition, expounded the law on this constitutional provision, and the law so expounded is this: Where all the provisions of a statute fairly relate to the same subject, have a natural connection with it, and are the incidents or means of accomplishing it, then the subject is single, it is sufficiently expressed in the title, and the statute is valid. The practice of medicine or surgery, and the treatment of the sick by whatever means employed, are certainly germane to each other, and are germane to the general subject of health. If all the provisions of a bill have a natural relation and connection, then the subject is single, and this, too, though the bill contains many provisions. If the treatment of the sick and the practice of medicine and surgery are not in natural relation, then it will be difficult to conceive of a case where two or more provisions in a bill relate to each other.

The defendant contended that the general words in the statute, "attempting to treat the sick," should by application of the rule of *ejusdem generis* (limiting general words after specific), be limited to attempts to treat by medicine or surgery, which are the special words preceding. But a review of the history of the law affords a complete answer to the claim that the doctrine of *ejusdem generis* applies to this case. It is not a case of general words following a specific designation. There might be some ground for the claim if the general words, "treat the sick," were in the original act, but, until 1901, the only designation was "medicine and surgery." No one will claim that the general words, "and any person attempting to treat the sick," added by amendment, are *ejusdem generis* (of the same kind or nature) with the specific words of the original act. Certainly, the words "medicine or surgery in any of its departments" exhaust the genus or class. It is obvious that the legislature, by this amendment, intended to include those who practice neither medicine nor surgery in any of its departments, but who profess to cure, and who treat or attempt to treat, the sick by means other than medicine or surgery. Evidently the legislature, in order to guard the overcredulous against injury that might result from yielding to the solicitations and professions of men who ignorantly undertake to diagnose and treat human ailments, deemed it proper, in the exercise of its police power, to require all persons who undertake to so treat the sick to show that they possess the qualifications which the lawmakers prescribe as essential.

Next, the defendant argued that the record showed that he did not "treat" his patients. He called what he did, not "treatment," but "adjustment." He said that he did not treat disease; he "adjusted the cause." But, call it what you will, the fact remains that the system of practice called in this case "chiropractic," as explained by the defendant's witnesses

V. 5 1911

and his counsel, involves both diagnosis and physical treatment. The defendant and his witness testified that they made no diagnosis; took no temperature; did not examine the tongue of the patient, nor any part of the body except the spinal column; that they did not treat the disease, but removed the cause, which is invariably found—no matter what the disease, whether consumption, small-pox, or any other ill that flesh is heir to—located in the spine, and in every case consists in an impingement of the nerves caused by a "subluxation"—whatever that may be—of the vertebræ. Yet, notwithstanding all this, the practice does involve skill, knowledge of anatomy, diagnosis and physical treatment.

It is a serious question whether the defendant would not come within the original statute as one practicing medicine or surgery. The practice of medicine is not confined to the administration of drugs; nor is surgery limited to the knife. When a physician advises his patient to travel for his health, he is practicing medicine. Broadly speaking, one is practicing medicine when he visits his patient, examines him, determines the nature of the disease, and prescribes the remedies he deems appropriate. Tested by this rule, the defendant was practicing medicine when he examined the patient's back, determined the trouble to be that a vertebra was subluxated, thereby impinging on a nerve, and proceeded to employ what he considered an appropriate remedy, namely, a sudden downward pressure with the fingers, thereby adjusting the vertebra and relieving the impingement. When the defendant says that he does not "treat," but "adjusts," and that he deals not with the "disease," but with the "cause," he is merely juggling with words. Changing the name does not change the thing.

In the main, the cases regard diagnosis as the test to determine whether a practice or treatment is included in the terms "medicine" and surgery." This is a practical test. A physician who advises his patient to sleep in the open air is treating him. Such advice, however, is based on a knowledge of the patient's condition obtained by diagnosis. The defendant professed to be able to ascertain by examination of the patient the cause of his trouble—a result rather beyond that which ordinarily attends the diagnosis of the regular practitioner. The method or extent of the examination is not the controlling feature. When the practitioner makes such examination of the patient as he regards as sufficient to indicate to him the cause of the trouble, and to indicate its proper treatment, he has diagnosed the case.

Nor does the court agree with the contention that so to construe this statute as to forbid any one to treat the sick without possessing the technical knowledge required to pass an examination before the State Board, where such treatment does not involve such technical knowledge, will result in denying to the people a constitutional right to determine how they shall be treated, and also in denying to citizens the constitutional right to pursue a lawful calling for a livelihood.

The court cannot say that an act which forbids treatment of the sick by one not possessing certain technical knowledge evidenced by a license bears no reasonable relation to the purpose sought to be accomplished by the legislature, namely, the protection of the public health. The legislature thought, perhaps, that this act was necessary to protect credulous sick people from injury at the hands of charlatans and quacks, with their specious promises of a sure cure without drugs; or it may have been thought necessary to forbid harmless practices in order to insure protection against those that are dangerous and hurtful. Sick people sometimes grow desperate in their search for a cure, or their judgment becom weakened, so that they fall an easy prey to the ingenious and varied devices of the pretended healer. We know that some people are prone to give more weight to a skilfully worded advertisement than to the advice of a competent physician. The legislature, no doubt, thought that in view of all these considerations the welfare of the people required the sweeping law of 1901. The method of practice disclosed by this record may be harmless and useful, but it is a treatment for the sick, related, to say the least, to the practice of medicine or surgery, and so is within the terms of the statute. The legislature may have been mistaken in thinking it necessary to forbid such a method of practice, but the act was passed in the exercise of its police power, and the court is not prepared to say judicially that such exercise of the power was either unreasonable or capricious, or that it bears no relation to the public health.

Waivers of Privilege

(Woods vs. Incorporated Town of Lisbon (Iowa), 130 N. W. R. 372)

The Supreme Court of Iowa says, in this personal injury case, that the statute of that state does not absolutely disqualify the physician from testifying, but it places it within the power of the patient to secure medical aid without the betrayal of his confidence. The patient may, therefore, waive objection, and, the statute expressly provides, permit the physician to testify. The waiver may be made in several ways: It may be done by calling the physician to testify as to privileged matters or by calling other witnesses to testify to the same facts. Manifestly, if the patient himself breaks the seal of secrecy and gives publicity to the whole matter, there is a waiver, and this is true whether publicity is given by the testimony of the physician, by the testimony of the patient himself, or by the testimony of his other witnesses. In other words, when the patient voluntarily publishes the occurrences of the sick-room, he cannot be permitted to insist that the prohibition and privilege of the statute continues to exist as to his physician. If by his voluntary act he lifts the veil, the professional duty of secrecy ceases, and the physician is a competent witness under the statute. It would be a reproach to the administration of justice, even in the absence of the statute, if the patient himself might detail all that occurred with his physician and yet compel the physician to remain silent.

In this case privilege was waived as to the plaintiff's attending physician by the plaintiff testifying at length as to the bearing-down pains she suffered and what the physician did. Privilege was also waived as to a hospital operation, by the plaintiff going into the details thereof. Then, where two or more physicians are engaged in the same operation, a waiver of the prohibition of the statute by making public the otherwise privileged matter, makes them all competent witnesses.

Nature of Action to Recover Penalty for Practicing Medicine Without a License

(People for Use of State Board of Health vs. Gartenstein (Ill.), 94 N. E. R. 128)

The Supreme Court of Illinois affirms here a judgment for the plaintiff in an action of debt begun in the municipal court of the city of Chicago to recover the statutory penalty of $100 for practicing medicine without a license. The court does not consider that this was a "prosecution," within the provision of the state constitution that all prosecutions shall be carried on "in the name and by the authority of the people of the state of Illinois," and conclude "against the peace and dignity of the same," but that it was an action for debt. The suit in this case, the court says, was neither criminal in form nor substance. It was not a crime at common law to practice medicine without a license, and the statute does not make it a crime. Where an offense is created by statute and a penalty is fixed for its commission, which is to be recovered by an action of debt and not by prosecution, the action is civil, and rules of criminal procedure do not apply to it. To practice medicine without a license is no more a crime, either in its nature or by the statute, than to peddle without a license, and in Webster vs. People, 14 Ill. 365, where the action was to recover a penalty for peddling without a license, it was held that the suit was not criminal, either in form or substance; that the act was not an offense at the common law, nor indictable under the statute; that it was not necessary to prove guilt beyond a reasonable doubt; and that either party might appeal. The fact that the defendant may be committed to jail as a method of collecting the debt does not fix the character of the suit as a prosecution. Nor was there error in a refusal to grant an appeal to the criminal court, because there was no statute authorizing an appeal from the municipal court to the criminal court and fixing the terms and conditions of such appeal. The method provided for the review of judgments of the municipal court is a writ of error from this court or the Appellate Court

Society Proceedings

COMING MEETINGS

Colorado State Medical Society, Steamboat Springs, Aug. 15-17.

AMERICAN SURGICAL ASSOCIATION

Annual Meeting, held at Denver, June 19-21, 1911

The President, DR. RICHARD H. HARTE, in the Chair

The officers elected were named in THE JOURNAL, July 22, p. 302.

Surgical Treatment of Epispadias in the Female

MR. HAROLD J. STILES, Edinburgh, Scotland: In two cases I successfully transplanted the ureters into the pelvic colon. If a routine examination of the vulva were made of all children suffering from incontinence of urine, the condition would be shown to be less rare than is supposed. As regards treatment, it is a comparatively simple matter to obtain a satisfactory cosmetic result by restoring the anterior commissure and uniting the two halves of the split clitoris. It is far more important, however, to get rid of the incontinence which results from the imperfect development of the urethra and vesical sphincter. This I succeeded in doing by dividing the ureters close to the bladder, ligaturing the distal stump, and then transplanting the proximal ends into the lower part of the pelvic colon by the intraperitoneal route, implanting the ureters very obliquely into the bowel by a modification of the Witzel gastrostomy principle. One ureter is transplanted at a time, three weeks or so being allowed to elapse between the two operations. In the first patient the right ureter was double, but this did not materially complicate the operation. Both patients made an uninterrupted recovery. The operations were done rather more than three years ago. The younger child, now 6 years old, had no incontinence during the daytime, but she occasionally wetted the bed during the night. The older child, now aged 10 years, had no incontinence whatever, and did not have to empty the rectum oftener than every three or four hours. Both children are well, and there is no sign of kidney trouble.

DISCUSSION

DR. JOHN B. MURPHY, Chicago: The failure to get good results in these cases is due not to the fact that the sphincter is not there, for it is there in every case, but that we do not sufficiently liberate the walls of the bladder and of the base of the urethra, in order to get an approximation of the layers of the urethra, before we produce a condition of retention of urine in the bladder itself. There should be a primary operation on the surface of the bladder and urethra before an attempt is made to close the bladder. In the type where the urethra has penetrated the clitoris and appears on the under surface of the symphysis with just a thin web between the urethral lining and the symphysis, an extensive dissection must be made to bring the bladder down and expose its neck for approximation.

DR. HOWARD LILIENTHAL, New York City: I would like to call attention to a method employed by Dr. Guiteras. After performing the sphincter work, the putting of a small rubber catheter into the ureters and keeping it there during the time of the healing of the plastic work above obviates the constant flowing of the urine over the operated parts.

DR. CHARLES H. MAYO, Rochester, Minn.: Several times I have had to remove the bladder for malignancy in the adult. I have brought the ureters out into the back in two cases. It seems to me this method described by Mr. Stiles opens up a wide field for cancer of the prostate and of the base of the bladder involving the trigone.

DR. JAMES E. THOMPSON, Galveston, Texas: I do not think sufficient time has elapsed since Mr. Stiles operated in the cases he reports for us to say with any certainty that an infection will not pass up the ureter to the kidneys. I have seen two cases in which the ureters were transplanted into the pelvic colon; one patient did splendidly for three years and a half, was apparently in perfect health, then suddenly fell sick and died in three or four months; the post mortem showed the kidney riddled with abscesses. The other patient lived for about four years and a half, with the same fatal termination.

The Open Treatment of Fractures

DR. EDWARD MARTIN, Philadelphia: In the treatment of transverse or nearly transverse fractures of the femoral shaft, the plating method is far superior to all others. The indication for the open operation is failure to produce partial or complete apposition of broken ends. The incision recommended is one to the outer side of the rectus muscle going through the crureus and coming at once on to the fracture. The method of reduction is that which can be accomplished with the least stripping of periosteum and soft parts, sometimes an iron hook passed into the medullary cavity of the upper end of the lower fragment suffices, aided by longitudinal traction applied to the ankle, or when the lower fragment is tipped back by this traction, by applying the pull just below the bent knee. When the lower fragment cannot be hooked in position this way it is advisable to angle out the fragments, oppose them and straighten the leg, thus using powerful leverage on the resisting muscles. When none of these methods are applicable, and this is usually the case in fractures of more than three or four weeks' standing, the middle of a canvas band is placed over the upper end of the lower fragment; to the long ends of this band are fastened from 100- to 200-pound weights, the band is prevented from angling out by direct pressure through gauze pads, and a wait of from five to ten minutes usually not only accomplishes complete reduction, but a little lengthening. One-quarter of an inch should be obtained before the traction band is taken off. Sometimes more than 200 pounds' pull is required. In old cases where the shortening is so great that it cannot safely be overcome by traction, resection of bone ends is, of course, indicated. Accurate apposition very often requires the application of forcible pressure.

The ultimate results are infinitely better than could be obtained by any conservative means. There was one death immediately after prolonged and forceful efforts toward reduction of fractures of both femora treated some four weeks after injury. The death was due to shock.

Fixation of Oblique Fractures by Bone Clamps Applied Through Small Punctures in Skin

DR. LEONARD FREEMAN, Denver: A screw with a long projecting end is inserted through a small hole in the skin into the upper fragment, well above the fracture, and another into the lower fragment in a similar manner. The fracture is then reduced by manual extension, and the projecting screws fastened together outside the skin by a firm external clamp, thus preventing over-riding of the fragments. The statement is frequently made that external bone clamps are apt to lead to serious infection, but in the opinion of the author this is not true. If the operation is a clean one, serious infection will not occur. On the other hand, if the operation is not clean, suppuration will take place with any method, but the result will be less disturbing in the presence of the drainage afforded by the screws of an external clamp; and, furthermore, in case of infection, these screws can much more easily be removed than can buried plates, ferrules or wires, with far less inconvenience to the patient and without the use of an anesthetic. To this may be added that properly applied external clamps hold the bones more firmly than do other appliances, and when they are removed the dangers of future complications are done away with completely. The method may also be used in certain other oblique fractures especially those of the clavicle and lower jaw.

Discussion on Papers by Drs. Martin and Freeman

DR. JOHN B. ROBERTS, Philadelphia: Dr. Martin speaks of pulling down the lower fragment with 100 pounds; this, I

V. 5
1911

think, is too much. Equally good results can be obtained by the ordinary old-fashioned pulleys with Buck's extension. Pins such as Dr. Freeman describes do not, as a general rule, suppurate, and if suppuration should occur it can readily be controlled.

DR. THOMAS W. HUNTINGTON, San Francisco: In dealing with recent fractures we must adopt the rule that the least possible foreign material must be placed under the skin, and with a reasonable hope of its being retained. This does not necessarily mitigate or affect the general question as to the propriety of operative procedure, even though we do now and then have to remove a plate, staple or wire, but the least possible number of removals will tend very largely toward establishing the legitimacy of this undertaking. A point of great importance is, that the further away from the skin you can place your foreign material, the more secure you are in retaining it permanently. A case of fracture of both bones of the forearm in a young girl who gave promise of being a very good pianist, was treated with staples in the radius, and now, fourteen months after the injury, the patient does not know whether she had a fracture or not, the function has been so perfectly restored.

DR. A. T. BRISTOW, Brooklyn: One point I would like to call attention to in the after-results. We operate, the patient becomes infected, we jump to the conclusion that the infection is the result of the operation, failing in almost every instance to take into consideration the possibility of a pathogenic infection, a sore throat, etc. Very often the infection is hematogenous in character and not due in any way to the operative procedure.

DR. JOSEPH RANSOHOFF, Cincinnati: I do not believe that this open method of treatment should be generalized, for in my judgment it is one of the most dangerous operations in hands not thoroughly competent in everything pertaining to surgical technic. A most important point is the time at which an operation should be performed. I think either at the time of fracture, or at least within a week thereafter; the longer one waits, the longer the deformity exists, shortened muscles and thickened periosteum, and the more difficult to reduce or wire, and the more difficult to keep the shortened muscles in apposition. We cannot pull too hard on the femur, for it takes at least from 45 to 65 pounds to overcome the pull of the strong musculature around the thigh.

DR. FRED B. LUND, Boston: One reason, I think, why we have not been more in favor of operating on the femur has been that we have not had the proper apparatus. Do not put on two plates where one will hold. The plates are good in fractures in old people and in those who will not wear cumbersome apparatus. I have operated on twelve cases; in two I had to take out the plates on account of suppuration, one three weeks after operation, and one twelve days. Both were cases of fracture of the forearm, which are very difficult to treat on account of the smallness of the bones. In plating the femur you should have a strong apparatus and should make the size of the foreign body introduced just as small as possible.

DR. ARTHUR DEAN BEVAN, Chicago: I do not believe in the routine employment of the open treatment for fractures, but do believe that this treatment has a very sure place in selected cases in the hands of experienced surgeons. We should employ it in cases in which we find from experience that we cannot obtain a good, useful, functional and clinical result by less dangerous procedures.

DR. ALEXANDER PRIMROSE, Toronto, Canada: A class of cases very applicable to this treatment is that of fracture at the upper end of the humerus where deformity is caused by rotation. With regard to the use of the open method in compound factures, I think in an aseptic wound where there is sufficient drainage, that the method is of value.

DR. ARPAD G. GERSTER, New York City: In several cases of fractures, generally comminuted, involving the lower end of the humerus, of the T or Y shape, where one or both condyles of the humerus have been broken off in such a fashion that no amount of manipulation or fixation by the older methods will be sufficient to reduce the bones into the normal position and so retain them, I have found the plating of very great value; no disagreeable dressings were necessary; the union was very prompt.

DR. M. L. HARRIS, Chicago: The use of plates in compound fractures of the leg I have found to be extremely useful. In the severe compound fractures ground full of dirt, in which there is certain to be suppuration, and which are extremely difficult to maintain in apposition by any method of dressing owing to the fact that they must be kept open and drained, I have used plates (knowing they must be removed later) to hold the bones in apposition. This forms a simple, easy fixation dressing with the wound open, thereby materially facilitating the draining of the wound and shortening the period of healing.

DR. STANLEY STILLMAN, San Francisco: In very heavy individuals the necessity of plating a fracture of the femur is imperative. I use very small and light plates. In fracture of both bones of the forearm, if you get the bones in place, there is not much tendency to displacement unless the fracture is very oblique. In simple fractures, where accurate and absolute apposition has taken place, recovery is usually very slow; the amount of callus thrown out is slight; better and quicker healing is obtained where the apposition is not so accurate.

Operative Cure of Internal Hydrocephalus

DR. E. WYLLYS ANDREWS, Chicago: Cases of acquired, obstructive hydrocephalus, rather than congenital hydrocephalus, are the ones curable by operations. Operative treatment by drainage can be carried out from various sides, spinal canal, fourth ventricle or lateral ventricles. The difficulty lies in making this drainage permanent without endangering the meninges from sepsis. The drainage of the ventricles must be into some absorbing cavity. Cases in which gold or iridioplatinum tubes were made to connect the lateral ventricle and the subarachnoid space, caused permanent reduction of the distended ventricle. Rapid and permanent cure of one almost hopeless case followed the use of a light glass tube. The glass was used as less irritating and lighter substance than metal, and seemed to give better results. Skiagrams taken after five years showed the tube 2½ inches long exactly in the position placed by me. I therefore advocate the use of glass suitably molded in all these cases. It is absolutely inert to all chemical changes in the body fluids, and is safe against breaking enclosed in the skull.

DISCUSSION

DR. LEWIS L. MCARTHUR, Chicago: The idea came to me, after reading an article by McBurney some years ago, that if instead of draining on the surface of the body, as he had tried to do, I drained through the bony vault beneath the scalp into the cellular tissue of the neck, I would be able to secure a permanent drainage. I found a silver cannula, such as is used in the veterinary departments for milking cows, which having a small flange would prevent its dropping into the skull, and would also prevent its falling out. I used this cannula with much success. The child, from being nervous and irritable, became much more normal in every way, although it died three years after my operation from an intestinal complaint contracted during warm weather. I have operated in two other cases after a similar manner also with good results.

DR. GEORGE E. BREWER, New York City: In 1898 I attempted in a case of internal hydrocephalus to drain the ventricle into the subdural space by the method of making a flap in the back of the head and exposing the posterior lobes, and above this space exposing the tentorium; then, by a puncture into the lateral ventricle, I introduced a small filament of rubber tissue flared to make a number of strands which did not totally close; the flanged surface lay on the tentorium and the perpendicular portion entered into the cavity of the lateral ventricle. The child recovered from the operation, but lived only six or seven weeks. The head diminished in size and the symptoms grew no worse. I tried the same method

in two or three other cases, but did not feel that the results warranted my continuing in the use of it. I do believe that any method which will allow the fluid to pass from the ventricles into the subdural space will be found ideal.

DR. JOSEPH RANSOHOFF, Cincinnati: I have tied the common carotid arteries in two children suffering from internal hydrocephalus, with most gratifying results. With regard to the introduction of a foreign body to permit of permanent drainage of the ventricles, it is a simple matter to make a drill hole near the median line and through it pare off the corpus callosum, thus establishing efficient and permanent drainage without leaving anything in the interior of the skull to give rise to possible later trouble.

DR. CHARLES H. FRAZIER, Philadelphia: I recently tied the common carotids in such a case. The child is still in the hospital, but a few days ago was in extremely good condition.

MR. HAROLD J. STILES, Edinburgh, Scotland: In congenital hydrocephalus there is no blocking of the passages at the fourth ventricle; indeed, the foramina in the roof of this ventricle are much larger than normal. That being the case, I do not think you can expect any form of drainage to do good in congenital hydrocephalus. I have never derived anything but temporary benefits from such methods. In congenital hydrocephalus there is a disturbance between the balance which should normally exist between the secretion and absorption of the cerebrospinal fluid. The indication is to diminish the secretion by ligaturing the common carotids, the one a fortnight after the other. The operation should be done early in the disease. I have never found it to do any good when the hydrocephalus is associated with spina bifida. In acquired hydrocephalus the indication is to drain the ventricle, because these forms are due to obstruction.

(To be continued)

AMERICAN NEUROLOGICAL ASSOCIATION

Thirty-Seventh Annual Meeting, held at Baltimore, May 11-13, 1911

The President, DR. H. M. THOMAS, Baltimore, in the Chair

Officers Elected

The following were elected president and secretary, respectively, for the ensuing year: Dr. W. N. Bullard, Boston, and Dr. Alfred R. Allen, Philadelphia.

Analyses of the Results of Rhizotomy in the Treatment of the Spastic State of Cerebral Diplegia

DRS. L. PIERCE CLARK and ALFRED S. TAYLOR, New York: The value of the operation does not consist simply in securing a better gait. The hope of further mental development is in no small degree bound up in the freedom of movements of the extremities which is made possible after rhizotomy. From a summary of all the cases it may be said that in operating on the lower extremity, the posterior roots of all five lumbar and the first two sacral enter into consideration. In a general way, it suffices in spastic palsy of the leg to resect the second, third and fifth lumbar and second sacral in mild cases; or the third and fifth lumbar and second sacral if the spasticity is attended by adductor spasm largely; or the third and fifth lumbar and first sacral if one desires to limit the completeness of the relief. In very severe cases, however, where there is extreme flexion of the knee, the second, third and fifth lumbar and first sacral or the first, second, third and fifth lumbar and the first and second sacral should be resected. In brachial spasticities, perhaps the best and most complete results follow resection of the fourth, fifth, seventh, eighth cervical and first dorsal roots. It should be borne in mind that a part of the spastic conditions should be left as a physiologic brace for the paretic muscles.

DISCUSSION

DR. JOSEPH COLLINS, New York: The more experience I have with this operation, the more I am convinced that its limitations are very narrow. During the past year I have had the operation done in one case each of spasticity due to disseminated sclerosis, old infantile paralysis, Little's disease occurring in an imbecile child, focal hemorrhagic encephalitis, occurring in the second year of life, and in a birth palsy. In only one of these cases, a child with hemorrhagic encephalitis, has the operation been of any benefit. In that case the results have been brilliant. I am of the opinion that this operation will finally be restricted to those forms of diplegia which are the result of inflammatory or hemorrhagic processes dependent on trauma.

DR. CARL D. CAMP, Ann Arbor, Mich.: I recommended the operation in a case of spastic paraplegia due to myelitis. There was marked spasticity in both legs. The operation consisted of resection of the second, third and fourth lumbar nerve roots. The result was less spasticity and less contracture. Unfortunately the patient had a chronic enteritis at the time of operation which caused death two months later.

DR. SMITH ELY JELLIFFE, New York: If the hypothesis of the condition is correct, namely, that the increased spasticity can be relieved by cutting off of certain sensory incoming impulses, then, in the cases to be operated on a clear notion must be held in relation to what sensory impulses are going to be cut off by the operation.

DR. J. RAMSAY HUNT, New York: Is there not a certain risk in cutting only a part of the root? Might there not form there a little tissue nodule which would irritate the fibers that have not been cut and that might retard the result some and produce a sort of false neuroma?

DR. W. G. SPILLER, Philadelphia: Most cases of myelitis are not benefited by the operation because there is a destruction of the motor fibers, and paralysis which is in the same degree or in greater degree than the spasticity. I have had a case of traumatic myelitis in which the benefit from operation was great. In that case the spasticity was far in excess of the paralysis. Of course, the operation is not suitable for spasticity due to disease of peripheral neurons.

DR. ALFRED S. TAYLOR, New York: It would be wise to operate in cases which offer indication and to observe effects, without specifying too definitely which patients shall and which shall not be operated on. In regard to Dr. Hunt's question concerning partial root section, that operation has appealed to me in those cases where the spasticity covers a large group of muscles. Instead of leaving one root entirely alone we could spread the effect by dividing portions of roots. Whether the theory that a neuroma might form or not, is correct, I do not know. Some of the patients were operated on three years ago and there is no evidence of difficulty arising from that source.

Chronic Hypertrophic Spinal Pachymeningitis

DRS. C. K. MILLS and EDWARD M. WILLIAMS, Philadelphia: From the diagnostic point of view this subject is of the utmost importance. The diagnoses made included grave hysteria with inability to walk, circumscribed serous meningitis, rudimentary or supernumerary ribs, syringomyelia and even for a brief season in some of the cases amyotrophic lateral sclerosis. The Charcot-Jouffroy classical type of cervical hypertrophic pachymeningitis was closely simulated in one of our cases; nevertheless, the meningeal and cord lesions were much more widely diffused than in cervical hypertrophic meningitis as usually considered. The case was that of a woman about 45 years old who suffered with recurring pain in the shoulder and arms, especially on the right side; who developed paralysis with atrophy in the distal portions of the upper extremities, impairment of power with exaggerated and abnormal reflexes in the lower extremities and also in the upper extremities dissociated anesthesia, the changes in pain and temperature sense, especially the latter, being much more marked than those for the other forms of sensibility. A striking feature in the case was the great variability in some of the main features of the syndrome. Early in the history of the case the patient lost the ability to stand or walk, regaining and losing it again, and even late in the case the loss of power changed almost from day to day. Foot coldness and the Babinski reflex were present on one day and two or three days later were absent or very slightly marked. Even sensory conditions varied from time to time. Operation revealed

marked thickening of the inside of the dura with flattening and displacement of the cervical cord, but the lesions were evidently too diffuse to warrant any attempt at removal of the thickened membranes. The patient died two or three weeks after the surgical procedure and necropsy revealed widespread internal pachymeningitis most definite in the lower cervical and upper thoracic region, but present throughout the entire length of the vertebral canal. The cord was compressed and in some places invaded. The vessels both of the membranes and cord substance were sclerotic, changed in caliber and in some instances obliterated.

Regeneration in the Sensory Root of the Fifth Nerve

DR. T. H. WEISENBURG, Philadelphia: The patient, a man of 30, had pains in the face for seven years for which there were first performed peripheral operations; finally, most of the Gasserian ganglion was removed and the sensory and motor roots cut. Two days after this the pain returned in spite of the fact that there was persistent anesthesia in the fifth nerve distribution. The pains were in the lower part of the jaw within the mouth, back of the tongue and would radiate at times to the ear and down the throat to the shoulder; were especially severe on swallowing and were not of the character that are present in tic douloureux. The patient lived for three years after the ganglion was removed. At necropsy there was found a cerebello-pontile tumor, which grew on the fifth nerve and compressed the pons and so separated the cerebellum from the former that it stretched the ninth and tenth nerves. During the man's life the lingual, the great occipital and the cervical nerves were removed. The recurrence of the pain in this patient was undoubtedly the result of irritation of the ninth nerve. In a study of the sensory and motor fifth roots distal to the tumor there were found distinct evidences of regeneration, marked in the motor root, slight in the sensory. These evidences of regeneration consisted in the formation of definite myeline sheaths and to a less extent of axis cylinders. There was hardly, however, enough regeneration to account for the return of pain.

Rachiocentesis (Lumbar Puncture) in the Treatment of Aural Vertigo

DRS. JAMES J. PUTNAM and C. J. BLAKE, Boston, Mass.: Sixteen patients with aural vertigo were treated by us by means of lumbar puncture. The best cases are those in which the symptoms do not indicate any very considerable disorganization of the labyrinth or any high degree of middle-ear disease, but rather an increase in functional excitability. Sometimes the favorable result is obtained at once, sometimes only after some days. Occasionally a second puncture is required. The amount withdrawn is usually 15 to 20 c.c. The only untoward result thus far observed is headache, which may last some days or even a week or more. Good results are obtained in a considerable proportion of the cases.

The Sensory Tract in Relation to the Inner Capsule

DRS. WILLIAM G. SPILLER, Philadelphia, and CARL D. CAMP, Ann Arbor, Mich.: In two cases seen by us and studied by microscopic serial sections, the lesion was very sharply defined, the separation of the sensory from the motor tract seems to have been clearly demonstrated, and it may be concluded that the sensory fibers are posterior to the motor, although some of the sensory fibers may pass through the posterior part of the lenticular nucleus.

A Pathologic Study of Türck's Bundle

DR. JOHN H. W. RHEIN, Philadelphia: I have studied two cases. In the first case the three temporal convolutions were entirely atrophied or degenerated and the atrophy cut in large part the optic radiation of Gratiolet and the fasciculus longitudinalis inferior. The fasciculus of Türck was totally degenerated in the foot of the peduncle, though there were a few stained fibers demonstrable in the subthalamic region and some fibers which were probably not longitudinal ones in the foot of the peduncle. The second case showed atrophy of the middle portions of the second and third temporal convolutions with degeneration of the white matter of the first temporal convolution and slight atrophy of the posterior portion of the first temporal convolution. The fasciculus longitudinalis inferior and the optic radiation of Gratiolet were markedly implicated at the level of the subthalmic region. The fasciculus of Türck was in the main preserved, though its volume in the foot of the peduncle was perhaps reduced somewhat. It seems from this that fibers from the occipital lobe do not figure greatly in the formation of the fasciculus of Türck, nor do the fibers from the middle portion of the second and third temporal or the posterior part of the first temporal convolution.

Deviation of the Tongue in Hemiplegia

DR. ERNEST JONES, Toronto, Canada: Three hundred and thirteen cases of hemiplegia were investigated. In 104 cases the tongue was protruded toward the paralyzed side (typical), in forty cases towards the opposite side (atypical), i. e., the contralateral geniohyoglossus was paralyzed nearly three times as often as the homolateral. In sixty-seven cases the tongue could be put into the cheek on the side of the lesion more easily than into that on the side of the paralysis (typical); in twenty-one cases the reverse was the case (atypical), i. e., the contralateral styloglossus was paralyzed more than three times as often as the homolateral. The two atypical symptoms did not tend to occur in the same cases, so that four sets of cases are to be distinguished. There is every reason to believe that the geniohyoglossus, the muscle of most significance in this connection, is represented in both hemispheres. The experimental evidence would seem to show that it is chiefly represented in the homolateral hemisphere, and the clinical evidence that it is chiefly represented in the contralateral. Beevor's explanation of lateral deviation is incomplete, and does not account for all the facts just stated. A final explanation is impossible until the course of the corticohypoglossal tracts is more fully elucidated. The four symptoms just mentioned can probably be accounted for by a varying implication of the four different corticohypoglossal tracts that proceed from each hemisphere; this may depend either on a variation in the crossing in different cases or on a variation in the position of the lesion.

DISCUSSION

DR. T. H. WEISENBURG, Philadelphia: In a case of tumor of the cerebello-pontile angle in which there was irritation of the ninth root, the tongue was deviated to the side of the tumor. In this man there was spasm of the tongue and often when he would open his mouth one could see the tongue in spasm, always to the side of the lesion and never beyond the lips. Sometimes the tongue would be protruded to the side of the cheek but never to the opposite side. This was rather interesting as a physiologic experiment on a human being.

DR. HARVEY CUSHING, Baltimore, Md.: I have a feeling that the tongue gets its sense of position from the position of the jaw, and deflection of the jaw may mean that the tongue is getting its sense of position directly from the jaw, and, even though the tongue is deflected, it is really in position when compared with the deflection of the jaw. After trigeminal neurectomy the tongue deflects. The tongue seeks its sense of position in the mid-line when it would appear to deflect.

Etiology of the Occupation Neuroses and Neuritides

DR. W. E. PAUL, Boston, Mass.: Experimental work shows that peripheral nerve injury or trauma can give rise to practically all the symptoms of an occupation neurosis. The majority of the symptoms cannot be explained by the central hypothesis. In ten cases the rule that all other acts than the occupational acts are done fully and freely did not hold. Two hundred cases analyzed from the records of the Massachusetts General Hospital demonstrate the frequency of pain located in many cases near or in joints. The impacts, squeezings, tensions and stresses of excessive physiologic functioning, acting on muscle tissue, or on sensory and motor nerve structures which run in the soft tissues and terminate in muscle, tendon, joints or fasciæ, bring about neurolytic or myolytic changes responsible for the occupation neuroses and so-called occupation neuritis and occupation pain.

Differential Diagnosis Between Maniac-Depressive Insanity and Dementia Præcox

DR. ALFRED GORDON, Philadelphia: A careful analysis of every phase of the mental affections in four cases observed for several days leads me to the following conclusions: In spite of the fact that everyone of the four patients presented, at one time, alternating phases of maniac and depressive outbreaks, and, at another time, symptoms of dementia præcox, there were certain features which constituted very important differential diagnostic elements, to wit, if in an individual affected with outbreaks of depression and exaltation, each characteristic of mania and melancholia, a change of his affective and intellectual faculties and particularly of the first is observed, the presumption is in favor of an eventual dementia præcox. If the patient begins his mental disorder with symptoms of dementia præcox and later develops the picture of maniac-depressive psychosis, but one following closely the other, the latter may carry with it some important features of the first, and these very same features present, then, a very significant diagnostic element.

The Early Symptoms of General Paralysis

DR. PHILIP C. KNAPP, Boston: I wish to report a study of 100 cases of general paralysis in ninety men and ten women, seen on the average of a year and eight months after the onset of morbid symptoms. Twelve were cases of taboparalysis. A comparison was made between the symptoms which were reported as the initial symptoms of the disease, and the symptoms presented at the time of examination. Sensory symptoms, headache, pain and paresthesia were the commonest initial symptoms, although of less relative frequency later in the disease. Apoplectiform and epileptiform attacks were relatively more frequent as initial symptoms than as symptoms of later onset. Motor symptoms were not very common at the beginning of the disease, but were almost universal later, occurring in eighty-seven cases. Nearly every patient presented alterations of the knee-jerk (ninety-six cases) and of speech or handwriting (ninety-three cases). Mental symptoms were noted among the initial symptoms in forty-nine cases. There was no case which did not present alterations either in the knee-jerks or in the pupils, or in the speech or handwriting. There were three cases in which no mental disturbance was detected and twelve more in which the mental disturbance was insignificant. This warrants the classification of paresis among the diseases of the nervous system in general rather than as a distinctly mental disease.

DISCUSSION

DR. H. R. STEDMAN, Boston: General paralysis is primarily and essentially a disease in the cortex, whose highest functions are the mental processes. Therefore, it seems to me to go without saying that mental enfeeblement must be present. There must be some shade or degree of enfeeblement in the beginning of general paralysis. Then, again, the average person is far less likely to notice, remember and give due weight to the purely mental, the minor mental changes, like impairment of attention and slight changes in character and disposition and all that, while, on the other hand, the physical changes, like tremor and the pupillary changes, because they are more noticeable and tangible, would be far more likely to make an impression on him and be remembered.

DR. MORTON PRINCE, Boston: There is a very great fallacy in statistics of this kind. That the patient cannot give an accurate account in a case of insanity goes without saying. A number of cases come to my mind, where the relatives say that the person is a very intelligent individual; they are unwilling to admit that any mental symptoms have developed, partly because of their unwillingness to face the truth, and partly to find some way of explaining those symptoms.

DR. G. L. WALTON, Boston: I agree with Dr. Knapp that the mental symptoms are far less prominent than the physical signs at the onset. The practical bearing is that if a patient presents himself with a mental condition suggesting paresis, if there are no pupillary or other reflex disorders, no trouble in speech or writing, no tumor and no history of apoplectiform or epileptiform attacks or other of the physical signs of the disease, the chances are overwhelmingly against the diagnosis of paresis.

DR. M. ALLEN STARR, New York: In a study of 200 cases from my clinic made by Dr. Hunt, one fact came out which has not been brought forward here, that is, among the early mental symptoms we found it was very much more common to have a period of mental depression than one of exaltation. A study of my cases confirmed the statement of Dr. Stedman that when the patients begin to fail, it is the highest centers that go first, and that in these cases it is not quite fair to make our estimation of the early symptoms from the statements of the patient when the disease has developed or from the statement of relatives, notoriously inaccurate witnesses, but we should bear in mind our own mistakes of undiagnosed cases which subsequent events have shown were cases of paresis.

DR. C. L. DANA, New York: Dr. Knapp has ignored the fact that in those symptoms which he describes as early symptoms of paresis, the sensory, the motor and the mental are all three important symptoms of a luetic disorder of the central nervous system. My experience is this: that paresis usually, or often, attacks a person first through a condition which we call luetic neurasthenia or luetic depression and more rarely luetic mania. If the disease goes on, as it usually does, then paresis develops, but if proper treatments are applied the sensory symptoms and motor symptoms are sometimes arrested and no paresis ensues. Now the test by which we can determine whether a luetic condition is one of luetic ischemia or early paralysis is to be found ultimately in a careful study of the blood and cerebrospinal fluid, and already we have got pretty near to the formula by which we can tell.

DR. THEODORE DILLER, Pittsburg, Pa.: I am sure there are many cases of paresis with physical signs which are perfectly well developed before the appearance of the mental symptoms.

DR. ERNEST JONES, Toronto: My experience is that the first symptoms to be noticed by the patient are physical, but the first symptoms of which he complains and which lead him to seek advice are of the mental kind, and that when the physician sees the case, the mental symptoms are the most constant and pronounced.

DR. HENRY A. COTTON, Trenton, N. J.: From the viewpoint of the hospital physician, I think we see, in some cases, the physicial signs appear first, and, in others, the mental signs appear first. Unless paresis is in a stage where there can be no mistake as to diagnosis, we should make lumbar puncture. The lumbar puncture taken in the early stages will show a lymphocytosis in cases in which one hardly suspects general paralysis from the physical or mental signs.

Methods of Curing Idiopathic Epilepsy

DR. L. PIERCE CLARK, New York: Statistics and percentages of cures are of no value unless backed by actual data. So-called spontaneous cures are almost invariably brought about by the reliance of the patient on a hygienic system more or less adequately adhered to. Special drug therapy, especially the sedative, are thoroughly discouraged in treating idiopathic epilepsy. Seventy-five per cent. of all idiopathic epilepsies show some metabolic defect. No patient showing real mental deterioration has recovered. The rather frequently reported cures at 4 or 5 years of age are probably but reflex convulsions; many such might in time develop into genuine epilepsy if they are not checked. Spontaneous cures rarely occur between 5 or 6 and 20 years of age. The chances of spontaneous cures improve greatly with advancing years, between 20 and 40 especially. Relapses in cured cases are not uncommon, even after fifteen or twenty years of arrest. The cause for relapses is a breaking away from the hygienic regimen, or emotional and mental stress. Restoration to a second arrest is very difficult of accomplishment.

DR. JAMES J. PUTNAM, Boston: I have tried the hygienic treatment without bromids in several instances; I have been very well satisfied with the results and mean to continue this treatment. If we are going to rely on hygiene, we must carry it to the point of adopting something equivalent to the careful training of a person who is about to enter some sort of athletic contest.

IOWA STATE MEDICAL SOCIETY

Sixtieth Annual Meeting, held at Des Moines, May 17-19, 1911

The President, Dr. M. N. VOLDENG, Cherokee, in the Chair

A list of the officers for the coming year was published in THE JOURNAL, June 10, p. 1729.

Typhoid Bacilli-Carriers

DR. HENRY ALBERT, Iowa City: I have tabulated eighteen instances of epidemics or endemics of typhoid traceable to typhoid bacilli-carriers. Chronic typhoid bacilli-carriers must be regarded as a menace to public health, it having been shown: (a) probably 5 per cent. of all typhoid patients become chronic typhoid bacilli-carriers; (b) 3 per cent. continue to excrete typhoid bacilli for more than one year after recovery; (c) 25 per cent. of all chronic typhoid bacilli-carriers have never had typhoid; (d) 1 in every 1,000 of the general population is a carrier; and (e) 10 per cent. of all cases of typhoid are traceable to carriers. Whenever there are household epidemics or a series of outbreaks of the disease in a locality or an institution, or among soldiers in the field, we should consider that a bacilli-carrier is the most probable source. If an individual has an attack of cholecystitis or biliary colic soon after an attack of typhoid, we should suspect that such has been caused by typhoid bacilli, and that such a person is a typhoid bacilli-carrier. Chronic typhoid bacilli-carriers transmit the germs to others practically only by the handling of articles of food consumed without being cooked or handled after being cooked. Persons who have recovered from an attack of typhoid should preferably not engage in dairying, kitchen work, etc., for at least one year after the attack. Persons who have ever had typhoid, or within a year have been exposed to infection with it, should thoroughly wash their hands with soap and water before handling any article of food which is to be consumed without being cooked or reheated to the boiling point. The administration of hexamethylenamin and typhoid vaccines, and occasionally the performance of a cholecystotomy, may be advantageously employed to remove the carrier condition.

DISCUSSION

DR. W. L. BIERRING, Des Moines: One is impressed with the longevity of typhoid bacilli in the human body. The gall-bladder seems to be an especially good habitat for their growth or life. On the other hand, one wonders to what extent convalescents really become dangerous as carriers, when we recall the many cases that pass out from under our hands, without opportunity to keep up disinfection, and still very few instances of subsequent infection occur in the neighborhood or environment of these patients. Undoubtedly a great many of the pathogenic organizations lose much of their vitality as soon as they get outside of the body; and yet, as representing the spirit of the State Board of Health, all typhoid patients who are convalescent should be kept under observation for a certain time, and those tracts or channels where these germs are harbored disinfected.

DR. T. F. DUHIGG, Des Moines: It seems obvious that typhoid bacilli under certain conditions do live for a considerable length of time outside of the body. They have been recovered from ordinary earth where it was dry enough to pulverize, and from that dust cultures made after a period of two weeks. In certain soil, being nurtured on pollution, they have stood up and answered to roll call over 300 days after being planted. It is unreasonable to trace every case of typhoid fever to a carrier, and it is unreasonable also to expect a bacillus to die promptly where conditions are favorable to its life. When a multitude of destroying organisms are present, obviously it will disappear very rapidly; but a polluted soil combined with a low water level will sustain typhoid bacilli for a considerable length of time.

Treatment of Carcinoma of the Breast

DR. L. W. LITTIG, Davenport: To secure the best results an early diagnosis and correct conception of the manner in which cancer cells are disseminated, and a properly planned and efficiently performed operation, are absolutely essential. There is diagnostic significance in even the slightest dimpling of the skin in the slightest pull, of asymmetry of the breast, of the shortening of the quadrant of the breast in which the tumor is located, and of the multiple dimpling of the skin, known as "peau d' orange." A discharge from the nipple is suggestive but not conclusive. A thin, bloody discharge is strong evidence of cancer, while a mucoid discharge points to benign growth. A discharge of bloody fluid suggests an intracystic papilloma. About 50 per cent. of cysts are malignant, and every cyst must be inspected carefully and the condition of its wall noted. The faintest difference in color and texture, a slight thickening at one point, a slight nodule, point to cancer. A smooth cyst containing blood without a papilloma, and a cyst containing granular, grumous contents, is cancer; likewise a cyst containing a fungoid mass. If the strawberry or raspberry shape of a papilloma be preserved, and the contents be hemorrhagic, it is benign. A smooth wall cyst without a papilloma means a cancer. The exploratory puncture should never be used, as it is dangerous and may disseminate cancer cells. A free incision and immediate microscopic diagnosis, and immediate radical operation, is the best procedure in doubtful cases. The dissemination of cancer cells by way of the lymphatics lying on the deep fascia must be considered to get the best results. The relative infrequency of recurrence in the axilla, and the relatively great frequency of recurrence in the scar, indicate that the Halsted operation does not pursue cancer cells in the fascia with the same efficiency that it does in the axilla.

The Handley operation, which assumes that cancer is disseminated by a process of permeation, and that permeation occurs in all directions, against the lymph current as freely as with it, must be the basis of a properly planned operation. The Tansini operation has a place. The best results are obtained by removing a 4 or 5 inch circle of skin and a 10 or 12 inch circle of fascia, the tumor always being taken as the center of the circle. This area includes the upper portion of the sheath of the rectus of both sides, the perforating branches of the internal mammary artery on the opposite side, that portion of the serratus magnus muscle under the breast, the fascia over the anterior edge of the latissimus dorsi, the pectoral fascia, and the pectoral muscles, except the clavicular portion of the greater pectoral. The axilla is to be cleaned with the Halsted thoroughness. Regardless of the plan of attack, all suspected tissues must be handled with gentleness until removed, that cancer juice may not infect the wound, or cancer cells be forced to distant parts by way of the lymphatics. Procrastination in the treatment of tumors is to be condemned, the cancer cells creeping onward in an ever-widening circle while the patient waits for cooler weather, and while the doctor waits for all the typical symptoms.

DISCUSSION

DR. D. S. FAIRCHILD, Clinton: Dr. Littig has pointed out the very great importance of the removal of the adjacent fascia by making a wide dissection. A well-planned scheme should be adopted of including all the tissues that the anatomists have shown might contain these cancer cells. I have removed quite a number of tumors of the breast, that were shown afterward not to be cancer, with the idea that they were. It is generally impossible for us to determine whether it is cancer by any sort of laboratory examination such as we have at hand at the time of operation, and make a limited dissection on the ground of adenoma or cystic growth. I think the last five cystic tumors of the breast that I removed were not malignant, and yet I have never regretted that I made the radical operation, because it was impossible for me at that time to determine with absolute certainty that they were not malignant, and I assumed that they were because I had no proof to the contrary.

DR. IRA A. CROW, Marengo: Dr. Littig seems to think that it does not matter whether you begin at the outer edge and dissect in, or begin at the gland and dissect out. It seems to me the Jackson incision, which is made from the axilla in toward the mammary gland, exposing the large axillary vessels with their accompanying lymphatics first,

is the easier and more proper method, for two reasons. First, you encounter the blood-vessels at their origin, where you can clamp or ligate them, and thus make a more nearly bloodless dissection as compared to beginning at the mammary gland and working toward the axilla, meeting the numerous muscles. Secondly, by beginning at the outer edge we cut off the source of invasion of the lymphatics and lessen the danger, I believe, of squeezing the carcinomatous cells out into the adjacent tissues.

DR. D. C. BROCKMAN, Ottumwa: I do not agree entirely with Dr. Fairchild in the removal of every breast because there is a tumor in it. If a young girl comes to me with a tumor that has existed for a year or two, I assume that it is probably an adenoma, and I enucleate by a sweeping incision under the breast, turn the breast over and remove the tumor; and if it is not malignant I do not touch the breast. Another thing. Let us stop operating on young women with cancer of the breast. It does no good; it does harm every time. I will never again attempt to remove a cancer of the breast of a woman under 35, whatever her build is, and never under 40 if she is fat. The older the patient, the better the results, because the old, wizened-up woman has wizened-up lymphatics that will not carry the cancer cells; while the fat young woman will die just as quickly as if she had not been operated on.

DR. GEORGE W. CRILE, Cleveland: I have recently had occasion to review practically all of the cases of cancer of the breast that I have had under my care—a little over 200. I divide all cases at the time I see them first into three classes: first, those in which the cancer is still limited to breast tissue, which we would call a favorable group; second, those cases in which the skin and some additional tissue are involved, which we call the unfavorable group; third, those that are hopelessly involved. Of this series, 80 per cent. of Group 1 remain cured for three years and over, while in Group 2 this percentage drops to 25 per cent. This is a tremendously strong argument that we must not allow our patients to go until they get into the second class, and we will have 80 per cent. cured.

The Symptomatology and Treatment of Early Tubal Pregnancy

DR. MAX EMMERT, Atlantic: Tubal pregnancy is an abnormality of many variations, and frequently it is very difficult to differentiate it from normal uterine pregnancy. It often occurs in women who have borne children and have become pregnant after a long period of sterility. The early symptoms vary somewhat from those of normal uterine pregnancy, but a positive diagnosis before rupture cannot be made from the symptoms alone. Cessation of menstruation occurs in only 43 per cent. of the cases, and consequently is of little importance unless present. Morning sickness occurs about as frequently as in uterine pregnancy, or in one-half to two-thirds of the cases. As this symptom does not appear until the end of the first month, it is of little use for an early diagnosis. The nervous phenomena of pregnancy, such as despondency and tinnitus auris, are said to be exaggerated in tubal pregnancy. Intermittent colicky pains in one or both ovarian regions is one of the most characteristic symptoms. These pains vary in severity, but in all cases are intense enough to attract the patient's attention. They may or may not radiate to the back or thighs. Abnormal menstrual flow at a time when not expected is another suggestive symptom, and is of great value in establishing a diagnosis. Vomiting when present is the most deceptive symptom, as it often points to a lesion along the digestive tract, and especially in the appendix, if the pregnancy be on the right side. Each case must be treated according to its individual merits. If the hemorrhage is profuse and shows no signs of abating after one or two hours of expectant treatment, operation is demanded. If the hemorrhage ceases, the patient may be treated expectantly, but always bearing in mind the danger of secondary hemorrhage, which is more fatal than the primary.

Too much stress cannot be placed on the necessity for absolute rest in cases of rupture. The patient should not move her body or be moved during the first twenty-four hours. She should not be permitted to move herself for at least three days. Immediately following the rupture morphin should be used freely to secure complete relaxation, ease the pain and quiet the nervous system. After the hemorrhage has ceased, salt solution is indicated, either by venous infusion, hypodermolysis or proctoclysis. The bowels should not be moved for three days, and then by a mild enema. Any woman who during the child-bearing age shows any abnormal signs or symptoms during pregnancy should be examined carefully with the intention of eliminating the possibility of tubal pregnancy. If this is done, the mortality from tubal pregnancy will be greatly reduced and the proficiency of the practitioner greatly increased.

DISCUSSION

DR. A. L. WRIGHT, Carroll: It may be said that the diagnosis of tubal pregnancy rests largely on the following clinical manifestations: An early history of pregnancy; pain in one side, severe at times; irregularity of the menstrual flow, and, prior to rupture, a tumor in one side of the uterus. After rupture, in addition to the pain, the patient presents a history of some profound disturbance. If seen at the time of shock, due to the loss of a large quantity of blood, she is not only suffering from the most intense pain, but there is unmistakable evidence that she is bleeding somewhere.

DR. J. F. HERRICK, Ottumwa: It has seemed to me that at times too great an effort is made to clean out blood-clots in cases of this kind. Unless the clots are infected, it is quite as well to close the bleeding point, and if the fetus is in the field, remove it and leave the clot to be taken care of by Nature. My experience is somewhat limited, but I know of three cases in which large clots were left in, and there was no evidence of any disturbance afterward. But, of course, very careful asepsis should be maintained in every phase of the operation, so that those clots may not become infected.

DR. GEORGE E. CRAWFORD, Cedar Rapids: A personal experience with fifteen cases has convinced me that the clots are very likely to become infected on account of their contiguity to the bowels. What could possibly be the idea of opening the abdomen and tying the bleeding surface and leaving the clots? I think the sooner we get those clots out the better for the patient.

DR. C. E. BOYD, Newton: My colleague and I have had an experience with twenty of these patients, and about one-fourth of them have been operated on per vaginam. It is our rule wherever hemorrhage has occurred, and wherever the clot has become infected and there is pus present, to do the vaginal operation. Sometimes you will have to operate to correct the disease in the tubes, but usually you will just have to do a cul-de-sac operation. As to leaving the clots of blood in, take them out every time. You take them out in other abdominal operations, and why not in this? They are more likely to be infected than ordinary clots in the abdominal cavity.

Dysmenorrhea and the Popular Errors Concerning It

DR. C. F. WAHRER, Fort Madison: Few subjects in medicine are more frequent than cases of dysmenorrhea, and few are more unsatisfactorily treated, as far as permanent relief is concerned. There is too much routine, all tending to dilation and curetting, and even ultra-radical surgical measures, such as would not be dreamed of were the patient a man with analogical ailments. Dilation cures less than 20 per cent. of all cases, as contracted cervixes are the exception and not the rule. And if done, it must be maintained for some time—several months, at least—by some cannula, or it will prove unsatisfactory in most instances. Nervous causes, faulty education, etc., are more to blame than real pathologic conditions, which in most cases are wanting. The wise family physician can do more here than all the surgeons and gynecologists in the world—though there would seem to be nothing to hinder a surgeon or gynecologist from being wise, unless blinded by greed or operative furor.

V. 5
1911

DISCUSSION

DR. M. E. WITTE, Clarinda: The typical patient who comes to you is a pale, anemic neurotic individual. Surely she is not the subject for a surgical operation. If she came to you complaining of any other trouble than pain at the menstrual period, you would probably think of building her up instead of looking for a surgical instrument to cut away something or to dilate some cavity. It seems to me that the treatment must be prophylactic, aside from individual cases. If we teach our women how they should dress, how they should live, the exercise that they should have, dysmenorrhea as a disease will disappear, or at least become less common than it is at the present time. The uncivilized woman is comparatively free from this trouble; it is the individual who wears fashionable clothing and does the things that a woman of fashion must do who suffers, not only from dysmenorrhea, but from the other diseases that are prone to produce this condition.

DR. C. W. BAKER, Stanwood: Dr. Wahrer made the statement that about 30 per cent. of the patients normally have pain. I would not want to believe him as saying that it is normal for any one to have pain, either in menstruation or in childbirth. I feel that if nearly one-third of all the patients with menstrual trouble have pain, it is because of a nervous taint that has been ingrown. The young girl has been forced and strained in such a way that her nervous system is broken, in a sense; she is a partial nervous wreck. Many of these patients cannot be relieved with anything but narcotics. Dr. Witte's suggestion that they be built up with tonics or in any way we can rebuild them is the treatment that will relieve most satisfactorily.

DR. J. F. HERRICK, Ottumwa: I have come to the conclusion that the pain of dysmenorrhea usually is not due to obstruction, but to a spasm of the uterine tissues, especially of the cervical region, and is of the same nature as the pains of labor. We have colic or spasm of the intestinal canal when there is no obstruction, due to the contraction of a hollow viscus. And so I believe that in dysmenorrhea the pain is due to faulty habits of life. These habits must be corrected otherwise no treatment, curettage or stem pessary will cure I do not believe all menstrual pain is abnormal; I believe a slight discomfort is perfectly normal, as I believe pain in labor is always normal, not only in the human family, but in all animal creation.

DR. CHAS. F. WAHRER: My plea is for the profession to get out of the ruts—to give the go-by to nostrums that are usually compounded with opium. My further plea is not to subject every woman to the knife and to the dilator, because it simply robs her of money, if she has any, and gives her a vast minority of relief and a great majority of disappointment.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Philippine Journal of Science, Manila

February

1 *Nutrition and Growth. H. Aron, Manila, P. I.
2 *Indications of Acid Intoxication in Asiatic Cholera. A. W. Sellards and A. O. Shaklee, Manila, P. I.
3 *Study of Intestinal Parasites in Tobacco Haciendas of the Cagayan Valley, Philippine Islands. D. G. Willets, Manila, P. I.
4 *Anthrax in the Philippine Islands. W. H. Boynton, Manila, P. I.

1. **Nutrition and Growth.**—The relationship between nutrition and growth was made the subject of a very exhaustive experimental study by Aron. He made four sets of experiments on fourteen dogs, and noted (1) the influence of a restricted diet on growing dogs; (2) effect on the weight and appearance of the animals; (3) relative amount of change in certain parts of the body as compared with other parts; (4) changes in the chemical constitution of the body; (5) energy requirement and food consumption. Then he studied (1) the biologic considerations concerning the suppression of growth by restricting the food; (2) energy required during growth, and (3) the increase in weight as an index to growth, with special reference to children. The most important results of his experiments may be summarized as follows: A growing animal which receives only sufficient food to keep its body weight constant, or to allow a slight increase, is in a condition of severe starvation. If by a restriction of food the increase in weight is inhibited, the skeleton grows at the expense of other parts of the body, especially of the flesh. Most of the organs retain their weight and size, while the brain grows to reach its normal weight. The composition of the body, when at a constant weight, undergoes remarkable changes: Fat is consumed more or less entirely, the quantity of protein, especially of the muscles, but not of the organs, is diminished and a great proportion of the body tissues is replaced by water; thus, this water and the increase of the skeleton together, replace the body materials lost. The caloric value of 1 gm. body weight of an animal which has undergone such a process to its extreme limit may amount to only one-third of the normal value. It is possible by supplying suitable amounts of food to maintain a dog in an emaciated condition, apparently in good health, and at the weight of a puppy, for nearly one year, while its weight at the end of the year should be three times as great. If such an animal is thereupon fed amply, it fattens and rounds out, but does not reach the size of a control animal which from the beginning has been normally fed. It is unable to make good the growth suspended by the long restriction of food. The growth principally depends on the tendency to grow possessed by the skeleton. The skeleton loses its capability of growing in more advanced age regardless of the size which the animal has reached.

2. **Acid Intoxication.**—Certain features in Asiatic cholera afforded an interesting opportunity to Sellards and Shaklee for the study of acid intoxication. They found that the stage of reaction and uremia in cholera and the acid intoxication of diabetes have the following features in common. There is a well-marked tolerance for alkalies, as much as 90 gm. in cholera and even 200 gm. of sodium bicarbonate in diabetes may fail to render the urine alkaline. In certain stages of both diseases, sodium bicarbonate possesses pronounced diuretic properties. The relative and absolute amounts of ammonia in the urine are considerably increased in both diseases. The administration of alkalies, even in large amounts, sometimes fails to reduce the excretion of ammonia. In cholera the urine frequently shows a pronounced diminution in the amount and percentage of urea; some evidence was obtained which suggests that the nitrogen may fail to be excreted as urea or ammonia, even when the organs which form urea are capable of performing their function and the kidney is able to excrete urea. Preliminary tests made by the authors indicated that there may be a definite reduction in the carbon dioxid content of the blood in the uremia of cholera as well as in diabetic coma. In both diseases, a diminished alkalinity of the blood has been reported. The injection of alkalies in the late stages of either disease usually modifies the course without affecting the ultimate termination. The early administration of alkalies in cholera has been effective in preventing death from uremia without any apparent increase in the number of deaths from other causes. The exact significance of these analogies can be determined only by a thorough investigation. Acetone and aceto-acetic acid have been noted in the urine of cholera patients but no excess of acid has been found which corresponds to the quantities of β-oxybutyric occurring in diabetes. Two forms of acid intoxication are distinguished by Naunyn, namely, a relative and absolute type. Loss of alkali from the body apparently may result from a pronounced diarrhea, this loss giving rise to a relative acidosis. It also is conceivable that there may be an excessive quantity of acid present, resulting in the production of an absolute acid intoxication in cholera.

3. **Study of Intestinal Parasites.**—An examination of 4,278 persons by Willets in the Philippines disclosed the fact that 85.46 per cent. of them harbored intestinal parasites of some kind. The ascaris was present in 62.04 per cent., the hookworm in 54.37 per cent. and the trichuris in 7.09 per cent.

Oxyuris, tenia, hymenolepis, strongyloides and trematodes were also present in from .02 to 1.50 per cent. In Willetts' opinion, three factors are acting to produce a high percentage of hookworm infection at the haciendas, namely, the nature of the soil, the tobacco plants, and the occupation of the people. The soil is composed of clay with which sand is generously admixed, the tobacco plants furnish shade-conditions which are favorable for the propagation of the hookworm, and the cultivation of the tobacco keeps the people in the field daily during the greater part of the year. The belief that the infections are obtained in the fields is supported by the facts that the hookworm percentage increases rapidly when the age is reached at which work in the fields is begun, that males, who are in the fields more than females, give a higher percentage of infection than the females, and that a greater percentage of persons are infected in the lowlands than in the uplands.

4. **Anthrax in Philippines.**—From the results derived from cultures, staining reaction and animal inoculations, Boynton was led to the conclusion that anthrax exists in the vicinity of Taytay. Since the animals, which were proved to have died of anthrax, were pastured in Libis, Mahabang Sapa, Mapandan, Lambac and San Isidro, the infection is shown to be widely disseminated around the town of Taytay. As it is almost impossible to procure definite information as to the number of animals and the manner in which they died in these places, Boynton says, one cannot state whether the infection is recent or of long standing in this vicinity. The general opinion of the veterinarians is that it is of long standing, but has not been recognized as anthrax prior to this time.

Illinois Medical Journal, Springfield

June

5 Gifts of Science to the World. W. E. Quine, Chicago.
6 Perineal Plastic Operations. J. Price, Philadelphia.
7 Aids in Abdominal Diagnosis. W. M. Harsha, Chicago.
8 Metastatic Ophthalmia. W. H. Wilder, Chicago.
9 Cases of Heart Disease Treated by Surgery. B. Holmes, Chicago.
10 Value of Psychic Influences. W. B. Eicher, Peoria.
11 Congenital Torticollis. C. M. Jacobs, Chicago.
12 Complete Suturing of Bladder After Suprapubic Section. G. Kollscher and H. Kraus, Chicago.
13 Blood Findings in Last Stages of Chronic Pulmonary Tuberculosis. J. C. Warbrick, Chicago.
14 Medical Profession of Douglas County. J. L. Reat, Tuscola.
15 Analysis of the Weber Test in One Hundred Cases. R. Sonnenschein, Chicago.

Yale Medical Journal, New Haven, Conn.

May

16 Eyestrain. G. H. Wright, New Milford, Conn.
17 Vital Statistics. J. H. Townsend, New Haven, Conn.
18 *Unusual Case of Gas Bacillus Infection. P. W. Bill, Bridgeport, Conn.

18. **Gas Bacillus Infection.**—The unusual features of Bill's case were (1) that the original wound was a punctured, sharp-cut, non-pulpifying one. (2) In the cases already reported the longest period of time elapsing from the moment of injury to the onset of symptoms is four days—here it was twelve days. This is accounted for by considering the infection due to the development of spores that were not removed at the original operation. It was suggested that the patient was infected at the second operation, which immediately followed the amputation of a leg crushed by a railroad train. The objection to this is that the gas bacillus patient had the chill and rise of temperature and signs of infection twelve hours before the second man was injured. This man, too, kept a perfectly clean wound. (3) The thigh from the knee up at no time showed any distention nor emphysema, while the leg below the knee showed these signs to a marked degree. This has not been accounted for. Notwithstanding the fact that the *B. aërogenes capsulatus* developed in the stump after amputation, the patient recovered. It seems that the good to be gotten from this case may be summed up as follows: That in all wounds into which soil has been carried the treatment must be: open widely, irrigate thoroughly and then irrigate again, and drain. Also, bodies of persons dying from infection by the *B. aërogenes capsulatus* are not to be buried as soon as the diagnosis is made; prompt radical treatment is well worth trying

Lancet-Clinic, Cincinnati

July 8

19 Cardiospasm. D. W. Palmer, Cincinnati.
20 Syphilis. C. Aryn, Milwaukee, Wis.
21 Surgery in the Female. D. D. Deneen, Cincinnati.

Wisconsin Medical Journal

June

22 Annual Address of President of State Medical Society of Wisconsin. B. M. Caples, Waukesha.
23 Operative Treatment of Long-Bone Fractures. P. F. Rogers, Milwaukee.
24 Retroversion of Uterus, Etiology and Symptoms. F. J. Gaenslen, Milwaukee.

Bulletin of Manila Medical Society, Philippine Islands

May

25 Treatment of Burns. H. E. Schiffbauer, Philippines.
26 Incidence of Gastro-Intestinal Disturbances in Infants and Children. R. Leynes, Manila.
27 *Duration of Passive Immunity, Especially that Against Tetanus. E. H. Ruediger, Manila.
28 Technic of Surgical Clinic of Philippine General Hospital, Manila. J. R. McDill and H. E. Schiffbauer, Manila.

27. **Duration of Passive Immunity.**—Ruediger found experimentally that passive immunity seems to be of short duration, perhaps of shorter duration than has been commonly believed. Five weeks after injection of 1,000 units of tetanus antitoxin a guinea-pig seems to be as susceptible to tetanus toxin as is a normal guinea-pig.

Journal of Medical Research, Boston

June

29 Inheritance of Tuberculo-Protein Hypersensitiveness in Guinea-Pigs. A. K. Krause.
30 Protective Influence of Leukocytic Substances on Experimental Plague Infection in Rats. H. Zinsser, G. W. McCoy and C. W. Chapin, San Francisco.
31 Ovarian Infection with Bacterium Pullorum in Domestic Fowl. G. E. Gage.
32 Hirudin and Hirudin Immunity. D. M. Cowie, Ann Arbor, Mich.
33 *Passage of Bacteria Through Intestinal Wall. M. P. Ravenel and B. W. Hammer, Madison, Wis.
34 *Elimination of Tubercle Bacilli from Infected Cattle. V. A. Moore, Ithaca, N. Y.
35 Vacuum Desiccation of Bacteria. B. W. Hammer, Madison, Wis.
36 *Opsonins in Pleurisy. L. Breskman and L. J. Tint, Philadelphia.
37 Pseudo-Nuclei of Erythrocytes. M. F. Boyd, Iowa City.
38 Ciaccio's Method for Demonstration of Lipoids. E. T. Bell, Madison, Wis.

33. **Passage of Bacteria Through Intestinal Wall.**—An emulsion of *B. prodigiosus* was injected into the rectum for the purpose of studying the passage of the organism into the blood as well as to give further evidence on antiperistalsis. The shortest time which elapsed between the injection and the making of the cultures was one hour and twenty minutes, and the longest time five hours and twenty minutes. Cultures were made from the stomach, large intestine, small intestine, cecum, blood and rectum. In no case was the *B. prodigiosus* recovered from the stomach, large intestine, small intestine, cecum or blood. In two cases it was not recovered from the rectum. Both of these cases had gone five hours and twenty minutes. The number of animals experimented on was only twelve, but the uniformity of results was striking. The conclusions which Ravenel and Hammer feel justified in drawing from this work are that: (1) Antiperistalsis will not, as a rule, carry bacteria above the ileocecal valve. (2) The passage of bacteria into the blood from the rectum does not occur rapidly nor surely.

34. **Elimination of Tubercle Bacilli.**—In order to secure information concerning the safety of the milk from occult cases of tuberculosis in cattle and to ascertain the extent of the immediate danger of such animals to others, a study of the elimination of tubercle bacilli was undertaken by Moore. Thirteen animals were used in these repeated tests. Moore examined microscopically 491 samples of milk and 580 samples of feces. Acid-fast bacteria were found in milk fifty-three times and in feces 209 times. His findings have convinced him that cows with tuberculous udders eliminate tubercle bacilli with the milk. In such cases these organisms are usually present in large numbers. Cows with glandular or pulmonary tuberculosis, in which the lesions are discharging into the bronchi, eliminate tubercle bacilli with the feces and with the droolings. In cases of intestinal tuberculous ulcers the organisms are excreted with the feces. Milk is usually infected with tubercle bacilli when it is taken from cows with tuber-

culous udders. It may, through contamination with feces or uterine discharges, be infected when drawn from cows with open lesions in the respiratory and digestive tracts or organs of reproduction. Tubercle bacilli are not, as a rule, present in the milk of cows that react to tuberculin and which on a careful physical examination exhibit no evidence of disease. Moore believes that the number of tubercle bacilli in market milk would be greatly reduced, and possibly entirely eliminated, by having frequent and thorough physical examinations of the dairy cows and the removal of all individuals showing evidence of disease.

36. **Opsonins in Pleurisy.**—The authors believe that a low opsonic index to streptococci and pneumococci in primary pleurisy may prove an aid to the diagnosis of a susceptibility to tuberculosis. Their studies showed that a subnormal tuberculo-opsonic index in the cases of primary pleurisy examined was associated with a low pneumococcic and streptococcic index. In cases of tuberculous pyothorax, a low streptococcic and pneumococcic index were associated with a high tubercle index.

Annals of Ophthalmology, St. Louis

July

39 Intra-Ocular Sarcoma and Sympathetic Inflammation. J. Meller, Vienna.
40 Case of Small Round-Cell Sarcoma of Sheath of Optic Nerve. W. C. Posey, Philadelphia.
41 Some Experiences with Ophthalmodiaphanoscope, with Exhibition of Lamp. H. F. Hansell, Philadelphia.
42 Strabismus Hook: Useful Instrument in Extirpation of Lacrimal Sac. E. A. Shumway, Philadelphia.
43 Case of Optic Atrophy with Horizontal Heteronymous Hemianopia. J. W. Sherer, Kansas City.
44 Chancre of Eyelid, with Demonstration of Spirochæta Pallida. W. T. Shoemaker, Philadelphia.

American Journal of Obstetrics, New York

July

45 *Vaginal Cesarean Section in Treatment of Eclampsia. R. Peterson, Ann Arbor, Mich.
46 *Treatment of Placenta Prævia at the Sloane Hospital for Women. E. B. Cragin, New York.
47 *Placenta Prævia. E. P. Davis, Philadelphia.
48 *Brief Analysis of Forty Consecutive Cases of Placenta Prævia. J. C. Edgar, New York.
49 *Best and Worst Methods of Treating Placenta Prævia. H. D. Fry, Washington, D. C.
50 Treatment of Placenta Prævia. F. S. Newell, Boston.
51 *Investigation of Use of Iodin in Skin Sterilization for Surgical Purposes. J. W. Bovée, Washington, D. C.
52 *The Funnel Pelvis. J. W. Williams, Baltimore.

45. Abstracted in THE JOURNAL, July 8, 1911, p. 161.

46, 47, 48 and 49. Abstracted in THE JOURNAL, June 10, 1911, pp. 1745 and 1746.

51. **Iodin in Skin Sterilization.**—So far as could be ascertained by Bovée by culturing epidermic scrapings, weak dilutions of iodin, even to 5 per cent. of the official tincture, thoroughly sterilize the surface of the skin after a period of time from two minutes to fifteen minutes from its application. These cultures incubated three days have not shown any colonies. Beyond that period of time investigations with this dilution of iodin in skin sterilization have not been made. While the inhibitive action of absolute alcohol is quite potent, this property is greatly enhanced by the addition of iodin to an equivalent of 5 per cent. of the U. S. P. tincture. Pubic hair placed in iodin dilutions of 5, 10, 20, 30 and 40 per cent. strength (of the official tincture), respectively, for two, three, five, eight, ten, twelve and fifteen minutes, respectively, all showed growths after three days' incubation, while using 50 per cent. dilutions under the same conditions practically always prevented growths. Control scrapings of skin taken from the abdomen above the umbilicus over periods of time varying from two minutes to two hours when 40 per cent. dilutions were used always showed negative results as to colonies. Cultures from hair and skin that had been subjected to 50 per cent. dilution of tincture of iodin never produced growths. Tincture of iodin diluted with an equal amount of absolute alcohol is considered reliable by Bovée as a local application in preparation of the skin or mucosa in any part of the body. Dilutions of less strength are unreliable if hairs or large hair follicles are in the field of operation He says that the 50 per cent. dilution of tincture of iodin, if not carelessly applied, is not likely to injure the skin.

52. Abstracted in THE JOURNAL, June 24, 1911, p. 1911.

Kentucky Medical Journal, Bowling Green

July 1

53 Preventable Blindness. W. Cheatham, Louisville.
54 Tuberculosis. J. F. Young, Monticello.
55 Early Recognition and Treatment of Tuberculosis. W. F. Boggess, Louisville.
56 General Sanitation and Hygiene. D. G. Simmons, Adairville.
57 The Ear, Nose and Throat in Relation to General Medicine. W. J. Thomasson, Newport.
58 Acute and Chronic Nephritis. J. H. Chrisman, Owenton.
59 Eugenics. G. J. Hermann, Newport.
60 Acute Articular Rheumatism. D. E. Lusby, Owenton.
61 Fees. C. W. Holland, Scottsville.
62 Castration for Neurasthenia. W. H. Edwards, Danville.
63 Fractures. R. H. Moss, Henderson.
64 Cerebral Decompression. G. A. Hendon, Louisville.

American Journal of Diseases of Children, Chicago

July

65 *Treatment of Sepsis in Scarlet Fever with Antistreptococcus Serum. M. Nicoll, New York.
66 Accessory Sinus Suppuration in Scarlet Fever. T. Hubbard, Toledo, Ohio.
67 *Studies in Metabolism of Atrophic Infants. C. A. Fife and B. S. Veeder, Philadelphia.
68 *Preparatory Study of Bacillus Acidophilus in Regard to Its Possible Therapeutic Use. T. M. Rotch and A. I. Kendall, Boston.
69 Anaphylaxis in Its Relation to Pediatrics. G. R. Pisek and M. C. Pease, New York.
70 *Fundamental Requirements of an Infant's Nutrition. J. Howland, St. Louis.

65. **Antistreptococcus Serum in Sepsis in Scarlatina.**—Nicoll's experience was obtained at the Scarlet Fever Hospital of the Department of Health of New York City during February, March and April, 1910, in the course of a very extensive epidemic of the disease. The serum used consisted of eleven strains of streptococci from scarlet fever patient's blood, throat, glands, etc., and one of streptococcus from a case of endocarditis. Owing to a somewhat limited supply at the time, it was thought advisable to give but 50 c.c. as an initial dose.

In so far as was possible in a badly overcrowded hospital, with overworked staff and nurses, every patient who showed markedly grave symptoms, regardless of the day of disease, was injected. By no means all the fatal cases during these months were the patients injected, as measles, diphtheria and other complications accounted for their unfavorable progress and often death. Again, patients who, in spite of the severity of onset, seemed to be in no immediate danger, not infrequently took so sudden a turn for the worse that there was no opportunity to make use of the serum.

There were injected in all, thirty patients, of whom seventeen died. Of these seventeen cases, four patients were brought in the hospital in a moribund condition, immediately injected, and died within a few hours. Of those who were ward patients twenty-four hours or longer, one died within two hours after receiving injection, two others within twelve hours, a length of time too short to hope for any relief from a subcutaneous injection. Another patient, after seeming to respond favorably, contracted measles and ileocolitis; another measles, followed by gangrenous varicella. The condition of three others was shown to be due to a complicating diphtheria which failed to yield to large doses of antitoxin following the serum. One patient was injected late in the disease, with the hope of affecting a double mastoiditis, 100 c.c. being given intravenously. The result was inconclusive, as an operation was thought desirable. Following this, the patient received 100 c.c. subcutaneously, grew gradually weaker, with no marked lowering of the temperature, which had been exceedingly high, and died two weeks later in extreme emaciation.

Nicoll has had an opportunity to observe the effect of large doses of this serum given intravenously, and with the exception of one case he has not seen any alarming results which could be attributed to this method of administration. However, he is not prepared at this time to recommend its general use in this way, except in those cases in which a delay of twelve hours would probably determine a fatal outcome. Here, intravenous injections are by all means to be preferred. Until there is some method of standardization and concentration of the serum, Nicoll believes, it would be highly desirable to use a dosage believed to be essential to the best results by

those who have had most experience with it, namely, for older children and adults, 200 c.c. injected, by preference, one-half into each side of the lower abdomen; for infants and young children, 100 to 150 c.c. in all. He concludes that in all severe cases of scarlet fever, the serum, if attainable, should be made use of in full doses and without delay.

67. **Metabolism of Atrophic Infants.**—In a study of two cases of infantile atrophy, the results of which are similar, the following conditions were noted: The fat absorption was less than in normal infants, although the infants were able to absorb large quantities of fat. The percentage absorption was better with a large amount of fat in the food than with low amounts. The amount of carbohydrate in the food did not influence the fat absorption. The amount of fat in the form of soaps in the feces was neither proportional to the amount of calcium in the feces nor to the amount of the carbohydrate in the food. Both the actual and percentage amounts of soaps were greater when the fat intake was low. The nitrogen retention was greater than in normal infants of the same age and weight. Increasing the amount of the carbohydrate produced an increased nitrogen retention, but the nitrogen retention was not influenced by the amount of fat in the food.

68. **Bacillus Acidophilus.**—The observations made by Rotch and Kendall are designed to show the feasibility of encouraging the growth of *B. acidophilus* by suitably modifying the food of the patient; if, however, acidophili are not present in the alimentary tracts of patients, it is apparent that they cannot be encouraged to grow even by the most careful dietary regulation. In such cases the authors deem it advisable, from the theoretical point of view, to introduce cultures of acidophili, provided they have been obtained from sources known to be normal and absolutely free from objectionable conditions. Cultures were readily obtained from two different patients by feeding maltose or lactose in moderate amounts. The details of the feeding experiments are given. It is not a matter of indifference, the authors say, which fermentative bacteria are encouraged to develop in the intestines; furthermore, certain organisms appear to elect the small intestine, others the large intestine. As a well-known example of the former, *B. bulgaricus* may be mentioned, while *B. acidophilus* is found most plentifully in the large intestine. Applying these principles clinically, it would appear that putrefactive conditions in the small intestine might be controlled more readily by an organism that generated lactic acid in that portion of the alimentary canal, and *B. bulgaricus* would be selected for this purpose, while *B. acidophilus* theoretically, at least, would be more promising for putrefactions of the large intestine.

70. **Infant's Nutrition.**—Howland emphasizes that the salts of potash, sodium, magnesium and calcium are all vitally necessary for the life processes. They are all present in the proper proportion in woman's milk, and are sufficiently represented in any dilution of cow's milk that would be used for any considerable length of time. In the majority of instances, they are in excess in the dilutions given to children, but this excess is not a factor of importance with the healthy child, which is the one that is under consideration. The salts of iron are, however, deficient both in human and, especially, in cow's milk. The large supply of iron present in the liver and other organs of the newly-born, may gradually be drawn on, and evidently is intended to be drawn on, during the first year, but this deficiency of iron is one important reason why an exclusively milk diet should not be persisted in too long. The fats and the sugars are the great providers of energy, and together they furnish approximately 90 per cent. of the body's requirements. To a large extent they may be used interchangeably, and an excess of one may for a time compensate for the deficiency of the other, though not indefinitely. Whatever disturbances these produce, are chiefly recognized by gastro-intestinal symptoms such as vomiting, diarrhea, or soapy stools, and so forth. A deleterious effect of either of these on metabolism, so far as the exchange of energy is concerned, has not been demonstrated. With the protein it is different. This must be furnished in a digestible and assimilable form to repair the loss by wear and tear and to provide for growth, but beyond a certain point there is a marked disadvantage in giving protein. Howland thinks it probable that slightly less protein is required for maintenance and growth in breast-feeding than in cow's milk feeding, owing to the better utilization that can be made of the homologous protein, but the excess required with cow's milk feeding is undoubtedly slight. When feeding a normal child, protein should furnish not less than 8 per cent. and not much more than 10 per cent. of the total energy in the food. When it furnishes 15 per cent., the specific dynamic action becomes noticeable, and when it furnishes 20 per cent., the effect is very marked. Howland emphasizes that in addition to the quantity of the food provided, a proper disposition of the energy among the various constituents is always seriously to be kept in mind.

Journal of Oklahoma State Medical Association, Muskogee

July

71 Diagnosis of Surgical Lesions of Kidney. J. H. White, Muskogee.
72 The General Practitioner as a Surgeon. A. S. Risser, Blackwell.
73 Treatment of Gonorrhea in Women by General Practitioner as Preliminary to Operation. J. F. Kuhn, Oklahoma City.
74 Pernicious Malarial Fever. G. A. Reber, Okemah.
75 Necessity for the Early Recognition of Peritonitis. G. H. Butler, Tulsa.

New Orleans Medical and Surgical Journal

July

76 *Amebic Colitis (Amebic Dysentery). W. E. Deeks and W. F. Shaw, Ancon, C. Z.
77 *Medical Treatment of Amebic Dysentery. W. V. Brem and A. H. Zeiler, Cristobal, C. Z.
78 Speech Defects; Treatment. S. Spyker, New Orleans.
79 Roentgen-Ray Examination of Gastro-Intestinal Tract. A. Granger, New Orleans.
80 Indications and Contra-Indications to Curettage. J. C. Hardy, Lecompte, La.

76. **Amebic Colitis.**—The analysis of case records leads Deeks and Shaw to the following conclusions: Amebic colitis is due to a specific organism, the *Entameba histolytica*, probably water-borne and symbiotic in character. There is no endemic center. Immunity, as we understand it, does not exist. Age, locality, nationality, or occupation plays no rôle in the etiology. The pathologic lesions are peculiar and characteristic. Amebicidal irrigations are useless. The bismuth-milk-saline method of treatment gives, in almost all cases, a perfect result. Occasionally, in extreme cases, surgical interference, after A. B. Herrick's method, is indicated. This method of treatment gives a maximum of cures with a minimum of recurrences and metastatic development, the most frequent of which is liver abscess. This offers a serious complication in the treatment, particularly if of the acute or fulminating types.

77. **Treatment of Amebic Dysentery.**—The most logical and most important criterion of the efficacy of any treatment of amebic dysentery, Brem and Zeiler point out, is the eradication of the infection. The general treatment consists in rest, appropriate diet, and opiates when indicated. For specific treatment, irrigations with solutions of various parasiticidal agents have proved unsatisfactory. The great superiority of the bismuth treatment over irrigations or even over treatment merely by rest and diet has not been proved. Eradication of infection has not been discussed in the reports of the bismuth treatment. Ipecac treatment has given satisfactory results in their hands. In a series of twenty-one patients with dysentery the amebic infection has been eradicated in twelve that were followed, with frequent examinations of stools, for from one to fifteen months. The infection was apparently eradicated in eight others followed less than one month. In only one instance of amebiasis with dysentery have they failed to get rid of the amebas with ipecac treatment. Failure occurred in four cases of amebiasis without dysentery, but in these the treatment was not satisfactorily carried out. Two cases indicate that, when ipecac fails to eradicate the infection when given by mouth, success may attend its administration per rectum or through the appendix after appendicostomy.

V. 5
1911

Maryland Medical Journal, Baltimore

July

81 Complete Transverse Destruction of Spinal Cord from Pistol Wound Without Penetration of Spinal Canal. R. Winslow, Baltimore.
82 Treatment of the Baltimore Drinking-Water with Hypochlorite of Calcium. W. R. Stokes, Baltimore.
83 Case of Trigger Finger. N. Winslow, Baltimore.
84 Douching and Fanning vs. Cold Sponging in Pneumonia. R. L. Hammond, Woodsboro.

Bulletin of the Medical and Chirurgical Faculty of Maryland, Baltimore

July

85 *Phylogenetic Association in Relation to Exophthalmic Goiter and Sexual Neurasthenia. G. W. Crile, Cleveland.

85. Exophthalmic Goiter and Sexual Neurasthenia.—Some of the principal points made by Crile are: The mechanisms by which the motor acts are performed, and the mechanisms by which the emotions are expressed are one and the same. These acts in their infinite complexity are performed by association, i. e., phylogenetic association. When our progenitors came in contact with excitation in their environment, action ensued then and there. There was much action—little restraint. Civilized man is subjected to innumerable stimulations without action. When these stimulations are sufficiently strong, but no action ensues, an emotion is produced. A phylogenetic fight is anger; a phylogenetic flight is fear; a phylogenetic copulation is sexual love—and so one finds in this conception an underlying principle which may be the key to an understanding of exophthalmic goiter. When through pathologic changes there is a constant stimulation of the whole motor mechanism from a hyperexcitability of the motor mechanism or what amounts to the same—a lowered threshold of the receptors that lead to action, and form an increase of activating internal secretions that apparently reciprocally excite each other—exophthalmic goiter is produced. Rest, which breaks the pathologic chain at the brain, or excision of the thyroid, which breaks the pathologic chain at the thyroid, are the two recognized forms of treatment.

Journal of Minnesota State Medical Association and Northwestern Lancet, Minneapolis

July 1

86 Venous Anesthesia. A. C. Strachauer, Minneapolis.
87 Epidemic Jaundice. A. N. Collins, Austin.
88 Absence of Appendix and Gall-Bladder. A. A. Law, Minneapolis.

Mississippi Medical Monthly, Vicksburg

July

89 *Twelve Months' Work in Obstetrics. B. L. Culley, Jackson.
90 *Acute Hydramnios, Complicated with Ascites. F. J. Underwood, Kettleton.
91 *Limitations of a Laboratory. H. B. Wood, Jackson.
92 *Observations Made in Six Cases of Mechanical Ileus. H. R. Shands, Jackson.

89, 90 and 92. Abstracted in THE JOURNAL, May 27, 1911, pp. 1609, 1610 and 1612.

91. Abstracted in THE JOURNAL, May 20, 1911, p. 1503.

St. Paul Medical Journal

July

93 Diagnosis of Syphilis. J. M. Armstrong, St. Paul.
94 Prophylaxis of Venereal Diseases. E. Klaveness, Sioux Falls.
95 Value of Blood Examinations in Surgical Infections. R. N. Andrews, Mankato, Minn.
96 *Some Suggestions and Personal Experience in Dealing with Hay Fever and Asthma. H. A. Beaudoux, St. Paul.

96. Treatment of Hay-Fever and Asthma.—Beaudoux believes that more diligent and painstaking investigation in regard to the condition of the nose and sinuses would increase the number of cures in this class of sufferers manifold. When an examination does not reveal accessory sinus disease, either by transillumination, intranasal examination, etc., with very rare exception, does he consider that as evidence that there is no disease present. In such cases he resorts first to the irrigation of the sinuses, second to the hardening of the mucous membrane by means of drugs and destruction of the nerve supply to sensitive areas; and should this prove to ameliorate the condition in a minor degree, he does not hesitate to resort to further investigation by surgical means. Barring such attention to conditions suggested and recommended by ordinary laws of hygiene, he has directed treatment to the organs and parts that are seemingly affected and included in hyperesthetic rhinitis and believes that measures less strenuously directed toward these parts are a waste of time. Whenever patients do not feel inclined to follow such recommendations as indicated, his advice is for them to seek some other locality where they may be free from their symptoms and enjoy their time and money in a less arduous way than to stay at home and attempt to fight the disease by less direct means.

Journal of Michigan State Medical Society, Battle Creek

July

97 Is Poliomyelitis of the Epidemic Type Transmitted Through Inhalation? J. G. R. Manwaring, Flint.
98 Simple Method for the Intravenous Administration of Salvarsan. J. J. Fabian, Grand Rapids.
99 Gastric and Duodenal Ulcer; Its Surgical Treatment. A. McLean, Detroit.
100 Cancer. F. A. Hargrave, Palo.
101 Acute Mastoiditis. C. R. Elwood, Menominee.
102 Immunology of Acute Infections. C. M. Stafford, Detroit.

Journal of Infectious Diseases, Chicago

June

103 Etiology of Canine Distemper. N. S. Ferry, Detroit.
104 *Contribution to the Pathologic Anatomy of Rocky Mountain Spotted Fever. E. R. Le Count, Chicago.
105 *Use of Active Human Serum in the Serum Diagnosis of Syphilis. F. B. Gurd, Louisiana.
106 Institutional Outbreak of Cerebrospinal Meningitis Restricted by the Elimination of Carriers. F. W. Hachtel and E. H. Hayward, Baltimore.
107 *Hand Infection Apparently Due to Bacillus Fusiformis. W. H. Peters, Cincinnati.
108 Attempt to Modify the Agglutinability of Bacillus Typhosus by Selective Isolation of Individual Bacilli. V. H. Moon.
109 *Murrina, a Trypanosomal Disease of Equines in Panama. S. T. Darling.
110 Paratyphoid-Like Bacillus Isolated from a Dog. E. H. Ruediger, Manila.
111 *A Bacteriologic and Cellular Study of the Lung Exudate During Life in Lobar Pneumonia. E. C. Rosenow, Chicago.

104. Pathologic Anatomy of Rocky Mountain Spotted Fever.—Le Count reports the results of six post-mortem examinations made by Ricketts on the bodies of persons dying of the disease. The cutaneous hemorrhages were general in all and varied from petechia no more than pin-head sized to large confluent and grotesquely shaped, bluish-black hemorrhages covering all parts of the body except the palms and soles. In a few of the bodies hemorrhages were observed in the pleura or omentum, in one instance in the substance of the lungs. The superficial and visceral lymph-glands were moderately enlarged. An icterus was always present. Enlargement of the spleen is quite characteristic of the disease. It was from two to three times the normal size in all the bodies examined. In other respects it was but little altered, fairly firm, and moderately hyperemic. A large infarct was present in one instance. The large veins and right chamber of the heart were distended with blood. The liver and kidneys were enlarged and hyperemic and in both organs varying degrees of cloudy swelling and fatty degeneration were met with. The changes in the other organs were neither marked nor constant enough to deserve mention, with the exception of the bone-marrow. In two bodies in which this was examined the marrow of the long bones was red to bluish-red.

105. Active Human Serum Diagnosis of Syphilis.—It was ascertained by Gurd that the natural complement content of human serum can be utilized in the serum test for syphilis if the serum be properly preserved and used when fresh. In addition the natural hemolysin against guinea-pig corpuscles can be employed in the hemolytic series in infants. The results obtained in over 600 tests have been uniformly trustworthy and have shown fewer errors than controls performed by the original Wassermann reaction and the Noguchi modification. Errors liable to give a false reaction, such as those occurring as a result of contamination of the serum with lipoids capable of binding the syphilitic antibody with the normal complement, giving a negative result with positive sera, are more readily noted if the complement present in the serum tested be determined at the time the reaction is performed. The fact that but very little agglutinin is present in human serum against guinea-pig corpuscles renders the

reading of the reaction easier than by methods using an artificially induced amboceptor, since in rabbit serum a sufficiently large quantity of agglutinin is produced to clump the erythrocytes, rendering the identification of a partial hemolysis very difficult. If serum to be tested is preserved in a uniform manner, preferably two hours in the incubator and subsequently in the ice-chest, it will be found to maintain its complement content usually for forty-eight hours and always for twenty-four hours. Older serum should not be used. For the testing of cases not adapted to examination by this method the author prefers the Noguchi system, utilizing quantities employed by Wassermann and with inactivated serum.

107. **Hand Infection Due to Bacillus Fusiformis.**—Peters' paper consists, essentially, in a preliminary study, microscopic and bacteriologic, of *B. fusiformis*. Two cases are recorded of direct transmission from one individual to another. The fusiform bacilli were not accompanied by spirochetes. The organism grew luxuriantly on Dorset's egg medium, and in various sugar broths containing a small amount of defibrinated rabbit blood. Mention is made of its resistance to moist heat, antiformin and hydrogen peroxid.

109. **Murrina, a Trypanosomal Disease.**—There has been an epidemic of trypanosomiasis among American mules and work horses in the Canal Zone. The disease resembled other trypanosomal diseases such as nagana, surra, mal de caderas, and Senegambian horse disease; but it presented a group of symptoms and pathologic features which stamp it as a distinct disease. It is distinctly a disease of mules and horses, for cattle are insusceptible. The pathogenic agent, *T. hippicum*, has morphologic and biologic characters which differentiate it from other species of trypanosomes. The chief distinguishing features of the disease are: anemia, weakness, emaciation and edema, conjunctival ecchymoses, conjunctivitis, pyrexia and some posterior paresis. The pathologic findings are constant and characteristic: splenic capsular ecchymoses, acute hemorrhagis nephritis, with acute glomerulitis and petechia; hemorrhages in renal lymph-nodes, epicardial and endocardial ecchymoses, and less constantly pleural, peritoneal, and conjunctival ecchymoses, and pleural effusion. The blood changes are those of anemia with lymphocytosis. There is much phagocytosis of blood-pigment by endothelial cells of the liver and spleen. Darling believes that the disease is probably transmitted mechanically by flies through the broken skin of cuts and various wounds. Saddle horses were not infected, and there are no evidences that any animals were infected by means of stomoxys or tabanids or by ticks or bats.

111. **Lung Exudate in Lobar Pneumonia.**—The most striking fact brought out by Rosenow's study is the great difference in the number of viable pneumococci in the consolidated lung in the later stages of the disease in the cases which recover and in those which die; in the former they are relatively few, in the latter they are very numerous.

Denver Medical Times and Utah Medical Journal, Denver

July

112 Mental Influence in Digestion. E. J. A. Rogers, Denver.
113 Financial Side of Dentistry. R. P. McGee, Denver.
114 The Social Evil. W. Anderson, San Francisco.

Buffalo Medical Journal, New York

July

115 Three Years with the Army of the Potomac. W. W. Potter, Buffalo.
116 Cerebral Compression. E. R. McGuire, Buffalo.
117 Early History of Medicine in America. R. Park, Buffalo.

New York Medical Journal

July 8

118 Recent Developments in Physiology and Pathology of the Thyroid. S. P. Beebe, New York.
119 Simple Method of Viewing Roentgenograms in Three Dimensions. M. Girsdansky, New York.
120 *Simplified Technic for Retrodisplacement of Uterus in Performing Baldy-Webster Operation. A. L. Soresi, New York.
121 Improved Technic for Intravenous Administration of Salvarsan by Means of Vacuum Burette. A. A. Uhle and W. H. Mackinney, Philadelphia.
122 In What Treatment May the Tuberculous Have Confidence? P. Paquin, Asheville, N. C.
123 *Effect of Artificially Induced Fever on Some Chronic Inflammatory and Ulcerative Lesions. H. Neuhof, New York.
124 Diagnosis by Inspection. J. G. Wilson, Ellis Island, N. Y.
125 *New Diluting Fluid for Counting Leukocytes. R. L. Pitfield, Philadelphia.

120. **Retrodisplacement of Uterus.**—In the technic proposed by Soresi a hairpin is used instead of the two forceps to catch the round ligaments and push them through the broad ligaments. The hairpin will perforate the broad ligament close to the uterus and directly under the ovarian ligament on each side of the round ligament. Until the sutures are put in, the uterus can be held up by the two hairpins, which are then withdrawn.

123. **Effect of Artificially Induced Fever on Chronic Inflammatory and Ulcerative Lesions.**—Coley's fluid was employed by Neuhof to secure observations of the effects of artificially induced pyrexia on chronic inflammatory and ulcerative lesions. The following experience first indicated that artificially induced fever might be beneficial in cases of chronic ulcerative disease. A man, aged 40 years, had been suffering for several years from a slowly progressive ulceration of the nose that had resisted all forms of therapy. Finally he had an attack of acute osteomyelitis of the femur accompanied by high temperature for several days. During this attack the patient noted the first improvement he had ever observed in the appearance of the ulcer—the lesion was cleaner and healthier looking. Soon after the attack had passed off, the ulcer assumed its original appearance. After some preliminary study, suggested by the improvement observed during the attack of osteomyelitis, injections of Coley's fluid were begun. The doses were made large enough to produce sharp febrile reactions. After each injection, redness and swelling of the base and edges of the ulcer were observed. In a few weeks, during which time the mixed toxins were injected every third or fourth day, the ulcer entirely healed. Several other similar cases are reported, the result in each case from the use of the fluid being the same. Neuhof has not yet determined on the exact amounts of Coley's fluid to be administered to these groups of cases, but it appears best to begin with small doses and gradually increase the amount until sharp general and local reactions are experienced. Patients sometimes feel depressed and miserable for a day following injections, even though there may have been but slight elevation of temperature. No other untoward manifestations have been observed after the administration of mixed toxins to these patients.

125. **New Diluting Fluid for Counting Leukocytes.**—The fluid used by Pitfield is as follows: Acacia gum, 20 gm.; distilled water, 50; mix, dissolve, and add glacial acetic acid, 50; gentian violet, 1 dg.; mix, warm and filter while warm through a wet filter. He finds that this makes a superior diluting fluid in counting leukocytes because it is viscid and for this reason does not flow out of pipettes easily, and these can be filled more accurately because the fluid flows much more slowly. Neater drops and of definite size may be slowly put up on the counting chamber. The pipette filled may be carried without fear of spilling the contents. The leukocytes do not settle in the mixing chamber quickly and remain evenly distributed throughout the fluid. The end of the pipette must be wet before the fluid can be blown out. The end of the pipette is sealed with the acacia. These are the chief advantages. There are disadvantages. It takes longer to suck up the diluting fluid and a little longer to mix blood and fluid; the fluid is sticky; pipettes are harder to clean. But the greater ease of controlling the fluid and accuracy makes one recommend it to busy doctors who make leukocyte counts from the patient.

Virginia Medical Semi-Monthly, Richmond

June 23

126 Roentgen Irradiation—Its Local and General Effects. J. W. Hunter, Norfolk.
127 The Ileo-Cecal Fold and Chronic Appendicitis. J. S. Horsley, Richmond.
128 *Is Pellagra a Disease Primarily of the Alimentary Tract? J. C. Johnson, Atlanta, Ga.
129 Doctor's Duty to Himself in the Face of Adequate Public Prophylaxis. R. K. Flannagan, Richmond.
130 Care and Management of the Breasts. C. W. Doughtie, Norfolk.

V. 5
1911

July 7

131 Surgical Treatment of Indigestion. J. E. Rawles, Suffolk.
132 Case of Progressive Muscular Dystrophy (Primary Myopathy). B. E. Washburn, Charlottesville.
133 Tracheotomy—Report of Cases. O. A. M. McKimie, Washington.
134 Germ Diseases—Analogy of, Nature's Means of Cure, Bacteriology, etc., Specific Treatment—Report of Cases. H. E. Jones, Roanoke.
135 Internal Podalic Version—Its Technic and Indications. E. B. Claybrook, Cumberland, Md.
136 Differential Diagnosis in Abdominal Injuries in Railway Surgery. S. S. Gale, Roanoke.
137 State Sanitarium for Drug Habitués. A. B. Grubb, Cripple Creek.

128. Abstracted in THE JOURNAL, June 10, 1911, p. 1753.

American Journal of Surgery, New York

July

138 *Relation of the Cervical Smear to the Diagnosis and Treatment of Diseases of the Fallopian Tubes. A. H. Schmitt, New York.
139 Anesthesia as Exciting Factor in Causing and Exaggerating Organic Disease. H. B. Ingle, Philadelphia.
140 Reply to a Criticism of the Technic of Ureteral Catheterization of Dr. Howard A. Kelly. H. A. Kelly and C. F. Burnam, Baltimore.
141 Local Anesthesia. A. E. Hertzler, Kansas City, Mo.
142 *Rapid Method of Healing Abscess of Breast. I. Seff, New York.
143 *Removal of Foreign Body from Right Bronchus by Upper Bronchoscopy, New Method of Passing Bronchoscope. R. H. Johnston, Baltimore.
144 *Otitic Meningitis Presenting Unusual Symptoms. S. Oppenheimer, New York.
145 Multiple Fungoid Papillomata of Larynx. W. W. Carter, New York.
146 Penetrating Stab Wound of Abdomen Involving Mesentery, Jejunum and Transverse Colon; Recovery. W. C. Cramp, New York.

138. **Cervical Smear.**—Based on observations made in thirty-nine cases, Schmitt recommends that if the history of the case be acute, and the cervical smear positive, palliative treatment should be instituted and continued for at least four weeks. Abdominal section should not even then be preferred unless the cervical smear is negative and the blood-count and temperature normal. If at any time during this period an extra-tubal pelvic abscess should develop the proper treatment is to open it by vaginal section. Should the history date back one or two months, with a normal temperature and blood-count, and a negative cervical smear, abdominal section may be safely undertaken at any time, provided the patient's condition warrants.

142. **Healing Abscess of Breast.**—In the case of abscesses situated in other parts of the body, Seff found that by simple puncture and evacuation of pus followed by irrigation with a solution of bichlorid of mercury and the subsequent injection of tincture of iodin or Lugol's solution, the abscesses healed with extraordinary rapidity, usually within five to ten days and with practically no scar. So far as breast abscesses are concerned, Seff's experience has led him to formulate the following rules for guidance in the treatment of suppurative conditions of the mammary gland: On the first appearance of localized pain, tenderness and induration, he advises the constant application of heat in the form of hot compresses for twenty-four to forty-eight hours. Under this treatment the indurated area becomes absorbed and the breast returns to the normal in a few days. However, if pus is already present, the application of heat hastens the softening of the indurated area and indirectly leads to the earlier evacuation of the pus by surgical means. As soon as a definite area of softening makes its appearance, a very small stab wound or puncture is made with a scalpel, and the pus is allowed to escape. The cavity is then washed repeatedly with a 1-5000 solution of bichlorid of mercury. With a small hand syringe the abscess cavity is then filled with undiluted tincture of iodin. The application of the iodin usually produces a moderate amount of pain of a burning character, which lasts but a few minutes. Within a very short time there develops an area of redness extending for a considerable distance beyond the confines of the abscess. This usually persists throughout the whole period of healing. Seff employs neither packings nor drains of any kind. A wet dressing of liquor Burowii is usually applied. The bichlorid of mercury solution and the tincture of iodin are used at subsequent dressings (usually at intervals of twenty-four to forty-eight hours), as long as the discharge continues to be purulent in character. When the discharge becomes serous, iodin alone is injected and a firm, dry dressing is applied. Within twenty-four hours after the first application of the bichlorid of mercury and the tincture of iodin there develops a well-marked zone of induration in the abscess wall. This persists during the entire period that the abscess discharges and gradually disappears within ten days after the abscess cavity has completely healed. In the majority of the cases healing takes place within ten to fourteen days. The original incision being practically a puncture wound leaves a barely visible scar. Six cases have been treated by Seff by the above method, four in lactating women and two in virgins. In none of these were complications present, nor was a repetition of the incision necessary. Secondary abscesses did not occur. Lactation was resumed at the end of the sixth day in all the nursing women.

143. Abstracted in THE JOURNAL, June 8, 1911, p. 165.

144. **Otitic Meningitis.**—The points of interest in Oppenheimer's case are: The undoubted existence of areas of cerebellar meningitis, present at the time of the primary mastoid operation, but with no recognizable evidences of the lesion. The development of aphasia, which is a very unusual symptom in connection with an uncomplicated meningitis. This latter symptom is due to the fact that the temporal lobe on the base has no known function, and, according to Starr, if the disease advances upward on the left side, a sensory aphasia may result.

Journal of Cutaneous Diseases, New York

July

147 Progress in Dermatology. D. W. Montgomery, San Francisco.
148 Sarcoid Tumors of the Skin, with Report of Case of Boeck Type. G. H. Fox, New York.
149 Histologic Changes Occurring at Site of Injection of 0.6 Gram of Salvarsan. E. D. Lovejoy, New York.

Louisville Monthly Journal of Medicine and Surgery, Kentucky

July

150 Chronic Dyspepsia. C. G. Lucas, Louisville.
151 Optic Atrophy from Enlarged Pituitary Body. S. G. Dabney, Louisville.
152 Carbuncle. J. E. Hays, Louisville.
153 Arteriosclerosis; Report of a Case. B. C. Frazier, Louisville.
154 Hemophilia in an Infant; Report of Case. B. C. Frazier, Louisville.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

June 24

1 *Early Recognition and Prevention of Cancer of Stomach. J. Sherren.
2 Acute Jejunal Obstruction in Case of Advanced Pregnancy: Operation; Recovery. E. A. Roberts and F. C. Wallis.
3 Treatment of Appendicitis in Children. W. A. Rees.
4 *B. Pyocyaneus Infection in Dogs and Its Similarity to Rabies. W. F. Harvey, R. M. Carter and H. W. Acton.
5 Case of Blackwater Fever in England. J. Booth.
6 *Rapid Treatment of Gonorrhea. A. C. Magian.
7 *Epidemic of Infectious Jaundice. K. R. C. Hallowes.
8 *Chloroform During Sleep. I. Jefferiss.

July 1

9 Case of Sporotrichosis. N. Walker and J. Ritchie.
10 *Carcinoma of Larynx. R. H. Woods.
11 Some Cases of Chronic Jaundice in which Opening of Duodenum was Required. H. B. Robinson.
12 *Two Cases of Removal of Part of Pericardium, Its Repair by Means of Pectoral Muscle. A. W. M. Robson.
13 Sulphur Miners of Sicily: Their Work, Diseases and Accident Insurance. Sir T. Oliver.
14 Experiments on Restoration of Paralyzed Muscles by Means of Nerve Anastomosis. R. Kennedy.
15 *Subtemporal Decompression Operation for Intracranial Pressure. J. Stewart.
16 *Blue Sclerotics and Brittle Bones. H. Burrows.
17 *Temperature in Croupous Pneumonia. William Downing.
18 Gastro-Intestinal Hemorrhage in New-Born Infant. T. Pentem.

1. **Cancer of Stomach.**—Inasmuch as at least one-third of all cases of carcinoma of the stomach arise in connection with gastric ulcer, Sherren believes these cases could be prevented. There is little doubt, he says, that acute gastric and duodenal ulceration is a septic disease. Acute ulcers of the stomach and duodenum are frequently found post mortem in cases of

appendicitis, urinary sepsis, burns, etc. Cell poisons circulating in the blood lower the resistance of the gastric cells so that autodigestion takes place, or minute suppurative foci occur in the lymphatic follicles along the lesser curvature. Sherren emphasizes that oral sepsis is a fertile cause of gastric ulcer, and hence one of the predisposing causes of cancer of the stomach. It is no uncommon thing for him to have to delay operation on patients with undoubted organic gastric disease of long standing until carious stumps have been removed. It is not known with certainty why many acute ulcers heal and others do not. Sherren suggests that it may be that oral sepsis has something to do with it. Every acute ulcer, whether of the type found in the disease called gastrostaxis or not, should be treated by rest in bed and suitable medical measures after all carious teeth have been dealt with. Chronic gastric ulcer should be treated in the same way unless signs of pyloric stenosis or hour-glass stomach are present, or hematemesis occurs, when the surgeon should be called in. If rest fails to relieve or symptoms recur on resuming work, surgical treatment should be adopted. Chronic simple ulcers of any part of the stomach or duodenum will heal after a well-planned gastrojejunostomy and efficient after-treatment. If the ulcer is large, or markedly indurated, or if there is any suspicion of malignancy, it should be excised in addition. Attention to the hygiene of the mouth, thorough treatment of acute and early chronic gastric ulcer, handing over to the surgeon those in the latter group that fail to respond to or relapse after treatment, would, Sherren says, greatly diminish the incidence of carcinoma of the stomach.

4. **B. Pyocyaneus Infection in Dogs.**—The authors attempt to make out something of a case for the existence of a *B. pyocyaneus* infection occurring naturally in dogs, and that such infection may, both as regards symptoms produced and tests applied, lead to confusion with rabies. The result of a bacteriologic examination in rabies should, of course, be negative. Some of the authors' cultivations from brain substance did not develop growths of *B. pyocyaneus* for more than seventy-two hours after inoculation. The point is an important one. Further, if subpassages are made by subdural inoculation, and the same train of paralytic symptoms leading to death appears as in the original experiment, the diagnosis of rabies would be considered as completely established. But they show that the brains of animals which have succumbed to subdural inoculation, and which have yielded pure cultures of *B. pyocyaneus*, are capable of giving rise to the same symptoms as in the original when reinoculated after the manner for rabies diagnosis. They have carried this experiment to as many as eleven subpassages in one case.

The disease produced in rabbits and guinea-pigs by *B. pyocyaneus* is well known. The points of differentiation from rabies are:

1. Absence of Negri bodies from the hippocampus major of the animal suspected of rabies, if a microscopic examination is available. The absence of Negri bodies from the brain of the animal inoculated is not absolutely to be relied on. The authors have been able to show scanty Negri body formation in the brains of guinea-pigs inoculated with pure cultures of *B. pyocyaneus*. 2. The paralysis induced in the inoculated rabbit is somewhat different in character, although not necessarily in incubation period, from that of rabies. It is very typical, and may easily be distinguished from that due to rabies when attention is drawn to it. The paralysis in its final stages could not be distinguished from that of rabies. 3. Cultures from heart's blood or liver or brain give a pure growth of *B. pyocyaneus*.

6. **Treatment of Gonorrhea.**—The treatment endorsed by Magian consists of large (3 gallons) irrigations with 1-5,000 potassium permanganate, followed by a similar washing with distilled water, then 3 gallons of water containing 1 ounce of protargol, 30 grains of chlorid of gold in 1 quart of water and repeated irrigations with one-half per cent. protargol in the course of the next twenty-four hours. These irrigations are repeated in increasing strength on the second, third and fourth days. On the fifth day, use 3 gallons of weak sulphate of zinc solution, and on the sixth day a similar amount of weak nitrate of silver. The exact strength of these last irrigations varies according to the severity of the case. The cure is said to be almost invariably complete. In a very few instances an additional day or two is required. Microscopic examination of urethral swabs reveals no gonococci at the end of the week, and there is no trace of any discharge. The urine shows no threads or any other deviation from the normal. Magian has used this method in 100 consecutive cases, and in only three instances was a cure delayed beyond the seventh day.

7. **Infectious Jaundice.**—Of twelve cases reported by Hallowes, eleven occurred in the same locality. In one family three sisters were affected in three weeks. A school teacher had jaundice on February 10, and in about fourteen days was quite well. A girl came to live in the house early in March, and in a few days she developed a severe attack of jaundice.

8. **Chloroform During Sleep.**—On two occasions Jefferiss has given chloroform to children without awakening them. The anesthetic was given on a modified Skinner's mask, which until the breathing showed signs of the patient being under the influence of the chloroform was held slightly away from the face. Before the corneal reflex disappeared the child allowed the mask to be laid on the face, and, although some slight movement of the head was made, there was no disturbance. The pupil, of course, could not be examined from the beginning of the anesthetic, but when first examined was moderately contracted and responsive to light. Both children were about 6 years of age.

10. **Carcinoma of Larynx.**—Woods cites a case of carcinoma of the larynx in which there was extirpation of primary and secondary growths, glandular recurrence, treatment with thyroid extract and disappearance of growths. So far as Wood knows the only cases in which success by this treatment has been recorded have been those of lymphatic recurrences in which the primary growth was first extirpated. Cancer can sometimes be made to undergo a recessional cure under the influence of an animal extract.

12. **Removal of Part of Pericardium.**—In the first case cited by Robson the operation for removal of a columnar-celled carcinoma of the fifth rib was begun with the knowledge that it might be necessary to open the pericardial sac, but without any intention of having to take away a considerable portion of it. On separation of the tumor, by dividing the costal cartilage close to the sternum, a large gap in the front wall of the pericardium was left, fully exposing the heart, which was seen beating, the apex rotating to the right with each beat. From the size of the gap it at once became evident that it would be impossible to close it by bringing together the edges, and the question arose as to how the operation must be completed. Robson decided to cover in the gap by separating from the chest wall the pectoral muscle and sliding it over, taking care to ligate every bleeding point and to leave the wound perfectly dry. After bringing over the muscle and stitching it in position so as to leave the heart in a closed cavity, the flap of skin with the subcutaneous tissue was brought back into position and fixed there by silkworm-gut sutures and Michel's clips. The patient gave no anxiety during the whole course of the operation, except at the moment of opening the pericardium, when the pulse suddenly flagged for a short time. The patient lived for some months and ultimately died from metastases in the bones. The second patient is alive, four years after the operation, but is suffering from recurrence of growth in the chest wall too extensive for removal.

15. **Subtemporal Decompression Operation for Intracranial Pressure.**—A man, aged 37, had been injured by the fall of a crane across his chest, fracturing several ribs, which crushed into his lungs. Within an hour his condition became hilarious. He vomited and some blood was mixed with the food. Drowsiness came on. He mentioned some stiffness in the right leg and arm. He asked to go to bed, and within two hours after walking into the hospital he was comatose. Six hours after the accident he was still comatose, pulse 50 per minute. The left pupil was dilated. It was decided to do a decompression operation. A fracture of the vault was found in the temporal

V. 5
1911

region and an extradural hemorrhage. The whole exposed area was cleared of blood clot. The effect of these measures was immediate. The pulse improved to 72. The dilatation of the left pupil disappeared. The breathing changed its character. Within a few minutes the patient moved his right arm and leg. He made an uninterrupted recovery.

16. **Blue Sclerotics and Brittle Bones.**—In the pedigree prepared by Burrows, which represents four generations, two interesting facts may be observed. In the first place, there is no instance of transmission of blue sclerotics except from a parent who actually showed that condition. The children of those members of the family who had white sclerotics themselves had white sclerotics without exception. Second, not a single case of fracture was known to have occurred among the members who had normal sclerotics, although the other individuals suffered with exceptional frequency from broken bones. The fractures had, in many instances, been caused by relatively slight violence. For example, a child sat down suddenly on the nursery floor, and was found to have broken its femur. A lady thought she had reached the bottom of the stairs when there was one step more, and she fractured her tibia. Of the twenty-nine individuals concerned, thirteen had blue sclerotics, and of these no fewer than nine suffered from brittle bones. No details are obtainable with regard to two persons. Among the remaining fourteen individuals, who had white sclerotics, there was not a single one who was known to have sustained a fracture. Of the nine persons said to have had brittle bones, seven have suffered from multiple fractures.

17. **Temperature in Croupous Pneumonia.**—In the case reported by Downing, the morning temperatures were higher than the previous evening temperatures and the accompanying symptoms appeared aggravated during the day. Crisis took place during the daytime.

Lancet, London

July 1

19 Temperaments: Is There a Neurotic One? R. Jones.
20 Outlines of Medical Hydrology. R. F. Fox.
21 *Chemical Study of a Case of Cyclic Vomiting, with Some Remarks on Creatinuria and Acidosis. E. Mellanby.
22 The Physiologic Ideal in the Artificial Feeding of Infants. J. Snowman.
23 Success or Failure in Electrotherapy. S. Sloan.
24 Case of Troph-Neurotic Anemia. T. W. Parry.

21. **Chemical Study of Cyclic Vomiting.**—Even if the causal connection between acidosis and diabetic coma is accepted, Mellanby says there can be but little doubt that the acidosis as such, accompanying fever, gastro-enteritis, delayed chloroform poisoning and cyclic vomiting, and many other conditions, is never of symptomatic significance. In other words, the term acid intoxication, in the real sense of the word, applied to these conditions, is a misnomer. The quantities of β-oxybutyric acid and other acetone bodies excreted in these conditions are small—i. e., 10 to 15 gm. at the most—compared with the quantities excreted in diabetes, e. g., one of Magnus Levy's patients excreted 160 gm. per diem, and it is difficult to see how they could possibly produce symptoms. As regards the case described, acidosis was merely a symptom and had nothing whatever to do with the attacks of cyclic vomiting.

Journal of Tropical Medicine and Hygiene, London

June 15

25 Egyptian Schistosoma Hematobium and Allied Forms. A. Loosa.
26 Epidemiology of Amebiasis in Southern United States and Absence of Liver Abscess in the Same Regions. H. D. King.
27 Report of a Case of Blackwater Fever in British North Borneo. H. J. McGregor.

Bristol Medico-Chirurgical Journal, London

June

28 Rhizotomy. E. W. H. Groves.
29 School Hygiene. J. O. Symes.
30 Design for an Elementary Radiographic Camera. W. Cotton.
31 Medical Aspect of Boswell's "Life of Johnson," with Some Account of Medical Men Mentioned in That Book. B. M. H. Rogers.
32 *Auricular Fibrillation. C. E. K. Herapath.
33 Furunculosis. L. S. Smith.
34 Four Cases of Cysts in the Neck of Similar Character, and Possibly Developed in Connection with Branchial Clefts. C. A. Morton.
35 Ataxia in Child Aged Three and a Half Years. E. C. Williams

32. **Auricular Fibrillation.**—In Herapath's opinion auricular fibrillation can be recognized without resort to polygraphic tracings. He says that if one relies on a continuous and complete irregularity, not on an occasional one, a visible systolic pulsation in the veins of the neck, and signs of venous engorgement with the absence of a presystolic murmur, there will be few cases in which the diagnosis will be wrong.

Bulletin de l'Académie de Médecine, Paris

June 13, LXXV, No. 24, pp. 655-674

36 *Cerebrospinal Meningitis with Primary Localization in the Ventricles. Recovery After Trephining and Intraventricular Serotherapy. H. Triboulet and Others.
37 *Gymnastic Exercises for Education of the Intestines as Treatment for Habitual Constipation. (De la gymnastique abdomino-rectale appliquée au traitement de la constipation habituelle.) C. Fernet.

36. **Intraventricular Serotherapy in Cerebrospinal Meningitis.**—One child, 2 years old, showed no improvement after intraspinal injection of antimeningitis serum, the twentieth day of the disease, and 15 c.c. of the serum was then injected directly into the lateral ventricle, after which the child recovered. Meningococci were found in the ventricles, but not in the cerebrospinal fluid until a few days after the intraventricular injection. When this injection was made the affection was extremely grave, the head enlarging and the child apparently idiotic and blind, unable to sit up or stand. Improvement was very gradual, but in two or three months the child was apparently normal once more.

37. **Gymnastic Exercises in Treatment of Constipation.**—Fernet says that if a mother would take the trouble to hold her baby over the vessel at regular intervals the child would soon learn to defecate and urinate at these times and could be kept clean and dry all the time. Regular habits should be continued into childhood, and he urges that teachers should insist on the children's having defecated before they come to school. The exercises which he has found an effectual aid in training the adult intestines to regular functioning are a series of deep breathing movements before rising in the morning, expanding and retracting the abdominal walls, alternating this "abdominal dancing" with light automassage of the large intestine, repeating these procedures four or five times. They can be repeated anew after breakfast, with a series of moderate retracting and expelling movements of the anus. These exercises act indirectly by reflex influences on the rectum higher up. The sluggish musculature throughout the abdomen feels the effect of all these exercises and the vicious circle of the bad habits of the lazy bowels is broken up. In the discussion that followed Fernet's communication, Monod said that among primitive peoples, ignorant of seat closets, habitual constipation is rare, and that the squatting attitude at defecation protects the inguinal canal against hernia during straining.

Bulletins de la Société de Pédiatrie, Paris

May, XIII, No. 5, pp. 221-252

38 Enlarged Tracheobronchial Glands. (Adénopathie trachéobronchique.) H. Barbier and V. Veau.
39 The Cerebrospinal Fluid in Tuberculous Meningitis. A. Netter and A. Gendron.
40 The Respiration Index in Mouth Breathers. (L'indice respiratoire dans l'insuffisance nasale de la seconde enfance.) P. Merklen.

Lyon Médical, Lyons

June 4, CXVI, No. 23, pp. 1001-1044

41 Occupational Dermatitis. (A propos des dermites professionelles.) P. Jourdanet.

June 11, No. 24, pp. 1045-1100

42 Persisting Communication Between the Auricles with Anomaly in the Coronary Valve. C. Lesieur, J. Froment and R. Crémieu.

Presse Médicale, Paris

June 17, XIX, No. 48, pp. 501-516

43 Action of Organic Arsenical Preparations on the Ear. (Accidents auriculaires au cours du traitement de la syphilis par les produits arsénicaux organiques.) H. Gaucher and H. Guggenheim.
44 Treatment of Paralytic Pes Cavus. (Paralysie du triceps sural.) M. Ducroquet.
45 Mobilization After Dislocation of the Shoulder. A. Yvert.

Semaine Médicale, Paris

June 28, XXXI, No. 26, pp. 301-312

46 Blood-Count During Sleep. (Variations de la formule leucocytaire pendant le sommeil.) G. Fulpius.

Berliner klinische Wochenschrift

June 19, XLVIII, No. 25, pp. 1113-1164

47 *The Dilatable Sound in Diagnosis and Treatment of Stenosis of the Esophagus. J. Schreiber.
48 *Action of Tropical Sunshine on Man and Animals. (Experimentelle Untersuchungen über die Wirkungen der Tropensonne auf Mensch und Tier.) H. Aron.
49 Hemorrhage in Adrenals in the Newly Born. (Nebennierenblutungen beim Neugeborenen.) G. Magnus.
50 Psychic Disturbances After Lightning Stroke. (Zur Kasuistik der nach Blitzschlag auftretenden psychischen Störungen.) H. König.
51 *Retrospective Diagnosis of Industrial Accidents from Necropsy Findings. (Feststellung der Unfalltatsache aus den Ergebnissen der Obduktion.) L. Feilchenfeld.
52 Etiology of Prolapse of Genitalia in Virgins. T. Rosenthal.
53 High Shoulder. (Zur Frage des sogen Schulterhochstandes.) M. Cohn.
54 Old Custom of Testing Temperature of Bath with the Foot. (Der Fuss als Thermometer des Mittelalters.) J. Kocks.
55 *Parabiosis and Xiphopagi. H. Coenen.

47. **Dilatable Sound in Diagnosis and Treatment of Stricture of the Esophagus.**—Schreiber's dilatable sound has not fulfilled all his hopes when he first devised it eighteen years ago, but it is doing good service in many conditions, especially in revealing occult stenosis of the esophagus and in permitting gradual dilatation of the passage. The sound is so fine that it can be worked through almost any stricture. When it has been introduced to the cardia, the envelope enclosing the tip is inflated. As the sound is then slowly withdrawn, the bulging tip is arrested by the stricture, and it can be manipulated in such a way as to aid in stretching the stricture.

48. **Action of the Tropical Sun on Man and Animals.**—Aron is professor of physiology at the University of the Philippines, and he has been making a special study of the conditions confronting would-be colonists in the tropics. His extensive experimental research all sustains his assertions that the ability to live and thrive in a climate is in reality merely a matter of avoiding the injurious factors in the climate or learning to protect one's self against them. This is shown in a striking way by his experiments with monkeys in their native home. Exposed to the direct rays of the sun, the monkeys all died; they are able to live in the tropics only by their habit of keeping in the shade of the trees. He found that vigorous native monkeys (*Macacus philipp. geoff.*), chained to permit a range only in an unshaded area, died in seventy or eighty minutes even during the coolest season of the year, December or January, and even as early as 8 or 9 a. m. In the shade of a tree or protected by an umbrella, the animals bore the hottest sunshine indefinitely without harm. He found, further, that the monkeys were able to bear the hot sunshine, unprotected, for three hours without harm if a breeze from a ventilator was kept blowing on them, while a control monkey, kept out of the breeze, died in fifty-eight minutes. A still more striking experiment was the placing of monkeys in a box, sheltering the body, but the head projecting unprotected above the box, while through openings in the box the breeze played constantly on the monkeys' bodies. One monkey thus had his head exposed to the direct sunlight for fifty-four hours in the course of twelve days, without showing the least sign of injury. The temperature in the scalp was often found over 116, but as the constant breeze prevented stagnation of heat in the body, no harm seemed to result. By ensuring the throwing off of the heat under the action of the breeze, monkeys were able to stand temperatures to which they promptly succumbed under other conditions. Aron's other experiments show the danger of fatal collapse from loss of water in the body, when there has been prolonged sweating with much evaporation. The collapse observed is similar to that in cholera. The details of his experiments are soon to be published in the *Philippine Journal of Science*.

51. **Retrospective Estimation of Traumatic Element in Fatalities.**—Feilchenfeld analyzes 120 accident insurance cases and his own experience in this line to estimate the causal importance of a trauma in the death of the insured. Cases frequently arise in which the exact diagnosis is impossible during life, and only the necropsy clears up the matter. Among the typical cases cited is that of a man of 53 who fell against a railing, hitting his left chest. He soon developed sharp pains in the heart region and attacks suggesting angina pectoris, and succumbed ten weeks later to heart failure in the course of influenza and pneumonia. The hemorrhagic pericarditis found at necropsy was accepted as the result of the accident, death being the result of a chain of causes, the accident being the first link—"The accident does not have to be *direct* cause of the death." In another case a man falling from a ladder caught and hung with his left hand and felt a severe pain in the heart region and thereafter had irregular pulse, abnormal murmurs at the apex and dyspnea. Necropsy five weeks later revealed laceration of the tricuspid valve. Any unusual muscular exertion or ordinary exertion under unfavorable circumstances may break down the heart when it is weak or degenerated, as also ordinary work done with an excess of energy. When the trauma involved the head and hemorrhages were found at points other than the usual sites of cerebral hemorrhage, the causal connection with the trauma was generally recognized. Feilchenfeld concludes further that apoplexy or rupture of an aneurysm, the consequence of chronic disease of the vessels, should not be regarded as coming under the head of an industrial accident unless the accident was directly concerned in its production as by sudden, severe increasing of the blood-pressure in the vessels of the brain. The connection between tardy apoplexy and a trauma can be accepted only when all other causes for the hemorrhage can be excluded and the skull is directly injured in the accident, the patient young and the interval not too long. Hernia at the usual points cannot be regarded as an industrial accident; there must be some preexisting predisposition.

55. **Parabiosis and Xiphopagi.**—Coenen reviews the five operations to separate twins joined at the thorax and pelvis which have been recorded in the literature, and discusses the conditions before and after the separation and the physiology in general of these double monsters and of parabiosis. He remarks that experimental parabiosis is liable to throw much light on metabolic affections and on the cancer problem, as well as on the prospects of operations on double monsters or united twins.

Deutsche medizinische Wochenschrift, Berlin

June 22, XXXVII, No. 25, pp. 1153-1200

56 *Vincent's Angina. (Zur Frage der Spezifizität der Plaut-Vincentschen Anginaerreger.) K. Blühdorn.
57 Syphilis of the Arteries. (Ueber syphilitische Erkrankungen des arteriellen Gefässsystems und einen Fall von Aortitis und Arteritis obliterans peripherica bei kongenitaler Syphilis.) J. Biermann.
58 *Counting Machine for the Blood-Count and Arneth's Formula. (Ein praktisch und zur Demonstration brauchbarer Differentialleukozytometer mit Arnethscher Verschiebung des Blutbildes.) V. Schilling-Torgau.
59 *Colic with Cholecystitis without Cholelithiasis. (Ein pathogenetisches Moment der Gallenkolik bei einigen Formen der Cholecystitis ohne Steine.) S. Solleri.
60 *Simple Technic for Reduction of Recent Dislocation of the Shoulder. (Neues, einfaches und schonendes Verfahren der Reposition frischer Schultergelenksluxationen.) A. Wagner.
61 Chronic Frontal Sinusitis Healing Under Radio-Active Emanations and Epinephrin Spray. E. Pick.
62 Present Conceptions of Aim and Purpose of Life, from Standpoint of Science. (Der Sinn des Lebens und die Wissenschaft.) F. Müller-Lyer.

56. **Vincent's Angina.**—Blühdorn has been examining the throats of 222 patients for fusiform bacilli and spirilla during the last few months, and states that he found one or the other, or both, in all but twenty-seven of seventy-six patients with diphtheria; in all but thirty-one of forty-two with scarlet fever; in all but thirteen of twenty-six cases of streptococcus or staphylococcus sore throats; in two of the four cases of ulcerative stomatitis; in all but ten of thirty-one cases of syphilitic mouth or throat lesions, and in all but eighteen of forty healthy persons. They were found generally close to the teeth in the "healthy" mouths, and it is probable that they are responsible for certain ulcerative mouth processes. Before assuming Vincent's angina, diphtheria must be positively excluded, as the clinical picture and stained preparations are liable to be inconclusive.

58. **Counting Machine for Differential Leukocyte-Count.**—The apparatus described shows at a glance the percentages of the various types of cells and simplifies the work while impressing the findings and the principles of the Arneth blood-formula on students. The count is made with steel ball-bearing balls poured into eight graduated glass tubes arranged in an upright standard, each tube corresponding to a special type of blood cell and graduated in divisions corresponding to the diameter of the balls and calculated for a hundred balls. The details of the apparatus are shown in eight illustrations, and it is commended as very simple and reliable.

59. **Colic with Cholecystitis Without Gall-Stones.**—Solieri reports a case in which hemorrhages in the gall-bladder induced typical gall-stone colics, although there were no concrements in the bile passages. The patient was a girl of 20, who was convalescing from typhoid when the first colic was experienced, acompanied by signs of cholecystitis. The colics recurred once or twice a month, and in the fifth month a laparotomy revealed an ulcerative hemorrhagic affection of the mucosa of the gall-bladder. The efforts of the gall-bladder to expel the accumulated blood had evidently been the cause of the colics, as was confirmed by observation of a recurring attack of the kind during convalescence from the operation. The fistula into the gall-bladder was kept open for a time to permit complete healing of the lesions, which had evidently been persisting since the typhoid fever, but the patient was finally entirely cured by the end of three months.

60. **Reduction of Recent Dislocation of the Shoulder.**—Wagner extols the advantages of the method described as not requiring assistance and as seldom requiring general anesthesia, while the pain is much less than with other methods of reduction and there do not seem to be any by-effects. He summarizes the details of twelve cases in which he has applied it with excellent results in all but two; no anesthetic was needed in eight of the cases, and merely the ether *Rausch* in the ninth. In another case nothing but prolonged extension with pressure on the head of the humerus finally conquered the dislocation. The fall on the outstretched hand or elbow forces the arm into extreme abduction, and the edge of the glenoid cavity toward the acromion acts as the fulcrum of a lever, prying by leverage action the head of the humerus out of the glenoid cavity, the capsule tearing at its weakest point the lower and internal part. Reduction is done by applying a fulcrum at another point and levering the head back into its place again by reversing the leverage action. This he acomplishes with a fulcrum in the axilla in the form of a long roll of cotton about 10 cm. in diameter pressed tight and fastened in the axilla by a band around the other side of the neck. The elbow is then pushed toward the body, over this fulcrum in the axilla, drawing the elbow a little forward and relaxing the pressure if muscular resistance is offered, waiting for it to relax before continuing the movement aiming to lever up the head of the humerus. At the same time the forearm is lightly rotated outward; the head then glides noiselessly or with a little jerk into place, and all are astonished at the ease with which it was done. If the patient has complained much of pain before reduction is attempted, it may be wise to give a small dose of morphin. With a recent subcoracoid dislocation this procedure is almost certain to prove successful in a few seconds or minutes, Wagner insists.

Deutsche Zeitschrift für Chirurgie, Leipsic

June, CX, Nos. 1-3, pp. 1-310

63 *Stenosis After Reduction of Incarcerated Hernia. (Genese der nach Reposition eingeklemmter Hernien entstehenden Darmstenosen.) H. Matti.

64 Abdominal Colloid Cysts. (Grosser gallertiger Erguss in der Bauchhöhle; Cysten mit gallertigem Inhalt im Bauchfell und in der Bauchwand; Umwandlung von Cysten in bindegewebige Knötchen.) E. Moser and G. Ricker.

65 *Connection Between Contusions and Cancer. (Zusammenhang von stumpfen Träumen mit der Entstehung von Carcinomen und Sarkomen.) A. Theilhaber.

66 Action of Thiosinamin on Cicatricial Tissue. (Experimentelle und klinische Untersuchungen über die Wirkung des Fibrolysins auf narbiges Gewebe.) P. Sidorenko.

67 Extension in Treatment of Fracture of the Upper Arm. O. Grune.

68 Cure of Invagination of the Ileum by Resection. (Beitrag zur Behandlung der Darmeinstülpungen.) T. Haagn.

69 Multiple Spleen-Like Formations Found in the Peritoneum Six Years After Splenectomy. R. Faltin.

70 Thrombosis of Cavernous Sinus Not of Otitic Origin. K. Otto.

71 Dislocation of the Pelvis. (Beckenluxationen.) H. Finsterer.

72 Extension in Treatment of Fractures of the Legs. O. Grune.

73 Gangrenous Inner Loop with Retrograde Incarceration. (Brandige "innere Schlinge" bei Vorfall nur einer Schlinge im eingeklemmten Leistenbruch.) W. Mintz.

74 *Operations Under Differential Pressure. (Ueber Druckdifferenzoperationen.) K. Friedmann.

75 Movable Cecum. (Das Coecum mobile.) T. Hausmann.

76 Incarcerated Intersigmoid Hernia. A. W. Krall.

63. **Stenosis of the Intestine After Incarcerated Hernia.**—Matti reports a case from Berne and reviews similar ones from the literature, his conclusion being that in case of doubt it is better to resect the intestine. Especially is this necessary when the groove left by the constriction does not recuperate with the rest of the intestine after reduction, but remains thin, showing that the mucosa has probably been injured beyond repair, and will lose its vitality either directly or secondarily, so that stenosis is liable. An exploratory incision is scarcely necessary, as even direct inspection is unable to decide the question of its vitality. He protests against all attempts at taxis that require force. The important point to bear in mind is that the stricture can develop from the mucosa and submucosa alone, the other layers of the intestine being still intact. Also that it is a mistake to ascribe very much vitality to a loop that has been incarcerated.

65. **Cancer Following Contusions.**—Theilhaber reviews 148 cases of carcinoma and 324 of sarcoma developing at the site of a contusion. The interval was minimal in fifty-nine of the carcinoma cases and in 180 of the sarcoma cases; six months in eleven and sixty-nine, respectively; a year in eighteen and forty; two years in fourteen and thirteen; from three to five years in twenty and fourteen; from five to ten years in eleven and three, and over ten years in fifteen and five. The location of the cancer was in the breast in 148 of the cases of carcinoma and in ten with sarcoma; on the legs in two of the former and 140 of the latter. The carcinomas were most frequent between the ages of 40 and 70, while the sarcomas were most frequent under 40. In prophylaxis he warns that the traumas affecting the breast had left a lump which persisted unmodified for years sometimes before the cancer developed. It is important, therefore, to treat every contusion of the breast with great care and strive to promote the absorption of any hard lump left. Theilhaber has long advocated hyperemia in treatment of parts of the body threatened with cancer. He applies superheated air regularly after removal of a cancer, as all large scars afford a predisposition to malignant disease. His results, he states, have been very gratifying, and they justify the use of superheated air as a prophylactic measure after all contusions of the breast. He also suggests that more energetic measures against inflammation should be applied at all points of the body where a sarcoma is liable to develop after a contusion, and that they should be kept up longer than is generally customary.

74. **Operations Under Differential Pressure.**—Friedmann reviews the experiences in this line at the surgical clinic at Berlin in charge of Bier. Thirteen operations on the chest or stomach were performed under this technic, including seven on account of cancer or tuberculosis requiring extensive resection of the chest wall, and a case of extensive cancer of the stomach and cardia. Details are given showing advantages of the various technics, results being tabulated for comparison. The general impression is not very favorable, the mortality having been 50 per cent., scarcely 40 per cent. having been benefited by the operation. It is the rule at the clinic, however, to have the differential pressure apparatus ready at every operation on the chest, but it is not used unless conditions are very serious, so that only the gravest cases are included in this review, the differential pressure being applied as the operation is attempted only as the last resort.

Medizinische Klinik, Berlin

June 18, VII, No. 25, pp. 953-990

77 *Unusual Forms of Diabetes Mellitus. J. Grober.

78 Practical Importance of Dimples, Fistulas and Dermoid Cysts in Sacral Region. (Sakrale Dellen, Fisteln und Dermoidcysten.) F. Honigmann.

79 *Gastric Hyperacidity and Gastric Ulcer. (Ueber Hyperacidität sschmerzen und Ulcus ventriculi.) H. Schur. Commenced in No. 24.

80 Therapeutic Combinations of Physical Forces. A. Bum.
81 Thiosinamin in Treatment of Cancer of Esophagus or Cardia. (Vorschlag zur Behandlung des Oesophagus und Kardiacarcinoms.) Kuester.
82 Question Blank to Collect Data in Regard to Asthma Patients. (Ein Asthmafragebogen.) Pescatore.
83 Experimental Research on the Anaphylaxis Toxin. G. Salus and F. Schleissner.

77. **Atypical Diabetes.**—In two of the cases reported by Grober the diabetes had developed in the course of tuberculous peritonitis, and there is reason to ascribe the diabetes to some tuberculous affection of the pancreas; these patients were a girl of 16 and a man of 30. In another case a woman of 63 developed rapidly progressive diabetes, whose fatal termination was hastened by severe arteriosclerosis and degeneration of the myocardium; necropsy revealed such changes in the vessels in the pancreas as readily explained the development of the diabetes. In another case a woman was brought to the hospital unconscious, with the diagnosis of typhoid, and it was learned that the woman had been under treatment for some time for anemia, and that she had been drinking exceptional amounts of coffee of late and had no appetite except for acid foods. Otherwise she had been in apparently perfect health up to the day of her collapse into diabetic coma, attending to her duties as a working housekeeper. The diarrhea accompanying the coma and the unconsciousness justified, then, the assumption of typhoid. Grober has encountered a number of diabetics whose face had become extremely thin, so that he now is able to recognize diabetes by this "mask of skin and bones," the fruity odor of the breath completing the clinical picture before examination of the urine has confirmed the diagnosis.

79. **Hyperacidity and Gastric Ulcer.**—Schur concludes this review of his experiences in this line by asserting that pain one or more hours after eating is almost invariably a sign of gastric ulcer and not merely a symptom of existing hyperacidity. He comments on the fact that ulceration from autodigestion never occurs in the gastro-intestinal tract below the field of action of the peptic ferment. There are no "tryptic ulcers," like the "peptic ulcers," and this difference in their action he explains by the ability of the peptic fermeat to digest raw connective tissue, which the tryptic ferment is unable to do. The aim in treatment with these "hunger pains" is to reduce the acidity of the gastric juice, to modify the diet to reduce the stimulation for its production and to have the stomach emptied as soon as possible and kept at rest. Milk is excellent on account of its fat content, reducing the stimulus for secretion of gastric juice; feeding by nutrient enemas may prove useful. He considers surgical treatment indicated sometimes for these hunger pains alone if they are so incessant and so severe as to interfere with attendance to business and show no improvement under medical measures. The excellent results of a gastro-enterostomy seem to be due more to the resulting reduction of the proportion of free acid rather than to the accelerated emptying of the stomach, as he shows by analysis of the findings in twelve typical cases after gastro-enterostomy. This suggests that ulcers anywhere in the stomach are liable to be benefited by the operation just as effectually as those located near the pylorus. Bile was found in the stomach content after the operation in every case. The "hunger pains" he explains are not due to the hyperacidity alone nor to a neurosis; some anatomic lesion must be the underlying factor. In eight cases in his experience the "hunger pains" were the only symptom of what proved at the operation to be a typical gastric ulcer. In several other cases there were no other symptoms but the "hunger pains" and gastric hemorrhages. One such case was particularly instructive: the first sign of trouble was a hematemesis; this was followed by periods of "hunger pains" and recurring hemorrhage from the stomach. An ulcer was found close to the pylorus with perigastritic adhesions. These eight cases in which the assumption of gastric ulcer was confirmed by the operation were encountered in a total of fifty-nine cases of "hunger pains," and he is convinced that an anatomic factor was at work in the other cases, although he has been unable to demonstrate it to date. The "hunger pain," he adds, is generally described as a cramp-like pain.

Monatsschrift für Geburtshülfe und Gynäkologie, Berlin

June, XXXIII, No. 6, pp. 679-836

84 *Excision of Sound Breasts for Eclampsia. (Das Martyrium der heiligen Agathe im 20. Jahrhundert.) W. Bokelmann.
85 *Vaginal Hysterectomy for Cancer of the Cervix. (Die erweiterte vaginale Operation bei Carcinoma colli uteri auf Grund zehnjähriger Erfahrung.) F. Schauta.
86 *Wertheim's Technic for Hysterectomy for Cancer of the Uterus. A. Mayer.
87 *Campaign Against Cancer. (Bekämpfung des Krebses im Königreich Preussen.) G. Winter.
88 Oleic Acid in Etiology of Eclampsia. (Rolle der Oelsäure bei der Eklampsie.) L. Mohr and R. Freund.
89 *Missed Abortion. M. Rosenstein.

84. **Excision of Sound Breasts for Eclampsia.**—Bokelmann protests with horror against the idea of amputating sound breasts as a means of treating eclampsia. Sellheim did it (as reported in THE JOURNAL, Jan. 21, 1911, page 230) as a last resort for an almost moribund young woman with postpuerperal eclampsia, and he believes that her survival was due to this measure. It is based on some vague analogies with what is observed in animals, suggesting some toxic connection between the mammæ and the eclampsia. But to date this theory has not the slightest scientific basis, Bokelmann remarks, and yet Herrenschneider has already followed in Sellheim's footsteps, and has recently reported a case in which he amputated the sound breasts of a girl of 18 whose eclampsia persisted after Cesarean section. Bokelmann recalls that amputation of the breasts was a common form of persecution applied to the early Christians. The martyred Saint Agatha is depicted in Art as bearing on a tray her amputated breasts. He reproduces one of these pictures and entitles his article "The Martyrdom of St. Agatha in the Twentieth Century," remarking that we are more humane than the Roman persecutors, as we anesthetize the women, but, he adds, "possibly the Romans might have given an anesthetic if they had known of one." He warns, in conclusion, against the "productive enthusiasts" who go off half-cocked. It is not ideas alone that make for progress, he remarks, but the patient, loyal plodding work of the many. And these faithful workers plodding along in the paths of tried and tested experiences will never wreak the damage which is inseparable from the uncritical acceptance and reckless application of many of the new ideas promulgated.

85. **Vaginal Hysterectomy for Cancer.**—Schauta reviews ten years of experience with the comprehensive vaginal operation for cancer. Forty-four patients declined the operation, and it was done in 445 out of his total of 910 cases of carcinoma of the cervix. The total operative mortality was 8.9 per cent., but during the last three years it has been only 3.7 per cent. He gives an interesting statistical table which shows the operability, permanent cures, mortality and absolute recovery percentage during the ten years. The enlarged vaginal technic seems to be especially advantageous for elderly women, the mortality in this group not surpassing that in the younger women. The vaginal route is particularly adapted for the cases with incipient cancer, obesity, myodegeneration of the heart, extreme anemia, cachexia and advanced age, and Schauta thinks that his technic guarantees results which are fully equal to those of the best abdominal technic. His percentage of absolute cures has gradually increased from 12.7 to 23.9 per cent., while Wertheim's percentage during the same period has increased only from 8.7 to 20 per cent. in a parallel group of cases (174). Schauta has found the operability of his cases increase from 43.9 to 64.9 per cent., and the absolute cures in the total material with an interval since of over five years has increased from 34.2 to 48.8 per cent.

86. **Hysterectomy for Cancer.**—Mayer presents the picture of the results of the application of Wertheim's technic by Döderlein in 248 cases of uterine cancer, 1902-1905. The percentage of absolute cures in 203 cases of carcinoma of the cervix is 16.7 per cent., while it was 46.4 per cent. for the twenty-eight women with carcinoma of the body of the uterus. The operative mortality was 18.3 per cent.

87. **Campaign Against Cancer of the Uterus.**—Winter has been striving for twenty years to educate midwives and practitioners to suspect and detect cancer in its incipient stage, and THE JOURNAL has reproduced his arguments in due order. His method of conducting the campaign against cancer has

been adopted by twenty different medical societies in Germany and in ten other countries in Europe and in parts of the United States. The fear that the public might become overanxious in regard to dread of cancer has proved groundless, as the physician's assurance of the absence of cancer reassures completely the patients who seek advice fearing malignant disease. The trouble is too often, Winter says, in the practitioner's failure to recognize incipient cancer, and here is where measures are urgently needed. Medical students should be trained especially to detect incipient malignant disease, and postgraduate courses and the medical press should treat this subject with special insistence. He urges the publication from time to time of articles dealing with the early recognition of cancer and detailed reports of cases in which it was overlooked. He also urges the authorities to publish a pamphlet on the early diagnosis of cancer and treatment of the early stages of inoperable cancer and place this pamphlet in the hands of every practitioner in the country. The midwives should be trained likewise, and the district physician should reexamine them every three years on this subject. All other persons, nurses, etc., should be debarred from having anything to do with the management of cancer, and every quack should be prosecuted for every case in which it can be proved that he has allowed a cancer to progress without proper treatment. Even more important, he declares, is the education of the public. It should be impressed on the public that cancer is curable, but only by an operation and only by scientific hands, and the public should be instructed in the signs suspicious of cancer and in the necessity for consulting a physician at once. Winter had 150,000 circulars of this kind distributed in 1909 throughout his province, and he urges that this should be done throughout the country. He also appeals to the central cancer research committee to notify all clinicians and members of medical faculties of the advisability of publishing occasionally enlightening articles on this subject in the medical press. He also urges the central committee to get up an educational pamphlet to be sent to every practitioner and to exert its influence to have lectures on the early recognition of cancer introduced into courses for graduates, midwives and nurses, and have warning bulletins printed on certain official circulars. The success of similar measures in his province justifies their adoption on a wider scale, he declares.

89. **Missed Abortion.**—Rosenstein reports two cases, one fatal, and insists on the necessity for promptly emptying the uterus on account of the progressive degeneration of the vessels which was striking in his fatal case. The uterus wall and vessels were transformed into a homogeneous mass in one part. The sooner the uterus is cleared out, the less severe these changes. The hemorrhage stopped in his cases as long as the Momburg constricting belt was applied, but began again whenever it was removed. But it will permit the emptying of the uterus and thus be of great assistance. In desperate cases hysterectomy should not be deferred too long.

Münchener medizinische Wochenschrift

June 20, LVIII, No. 25, pp. 1337-1384

90 *Cancer of the Gall-Bladder. (Zur Diagnose und Therapie des Gallenblasenkarzinomes.) B. Riedel.
91 *Filling Kidney Pelvis with Oxygen as Aid in Pyelography. (Darstellung des Nierenbeckens und Ureters im Röntgenbilde nach Sauerstoffüllung.) A. v. Lichtenberg and H. Dietlen.
92 Metabolism of Albumin, Etc. (Ueber einige Fragen des Stoffwechsels und der Ernährung.) A. Gigon.
93 The Meiostagmin Reaction with Cancer. G. Izar.
94 Typhoid Abscess in the Spleen. (Zur Diagnose und Behandlung des typhösen Milzabszesses.) K. Propping.
95 Appeal for Data on Nervous Fluctuations in Pulse-Rate. (Wechsel in der Pulsfrequenz.) R. Geigel.
96 Transient Mishaps with Salvarsan. (Ischiadikuslähmung mit Entartungsreaktion nach Intramuskulärer, schwerer Kollaps nach subkutaner Injektion von Salvarsan.) W. Rindfleisch.
97 Induced Petechiæ not Pathognomonic for Scarlet Fever. (Zur Beurteilung des Rumpel-Leedeschen Scharlachphänomens.) A. Mayr.
98 Ichthyol in Local Treatment of Furuncles. F. Bruch.
99 *Importance of Diazo Reaction for Prognosis and Treatment of Pulmonary Tuberculosis. (Bedeutung des Urochromogens bei Lungentuberkulose.) M. Weisz.
100 *Water Closed Flushed by Knob Pressed by Foot. (Ueber die Spülvorrichtungen der Klosettanlagen.) E. Hartung.

90. **Diagnosis and Treatment of Gall-Bladder Carcinoma.**—Riedel expatiates on the importance of teaching the lay public that cancer may develop and progress for a time without pain, and that the very fact of the absence of pain when any anomaly is observed should suggest the possibility of malignancy. In the gall-bladder especially, cancer generally develops on the basis of a gall-stone not causing any trouble. When pains are experienced, the trouble is often too far advanced to be operable. Jaundice then develops insidiously, a knobby tumor becomes palpable, ascites appears and the complexion becomes an ashen gray while the patients lose appetite, especially for meat. The legs swell and the patients die without ever having presented any fever. When cancer develops in the gall-bladder without jaundice it generally runs the above course or it may come on under the clinical picture of a first attack of cholecystitis with fever, vomiting and rapid growth of the tumor. Or there may be repeated attacks of acute cholecystitis or a chronic form. The cancer may come on with the clinical picture of perforation of a gastric ulcer in the lesser curvature, simulating a perforation occurring gradually under development of a hard tumor in the left rectus muscle. Great was the surprise in a case of this kind when a gall-stone was found in the supposed "escaping stomach contents." The pain and tumor in this case were under the left costal arch, and he has frequently encountered cases in which the patients complained of pains in the median line only. On palpation of a tumor a pyloric cancer was assumed, while the trouble was really merely a gall-bladder tumor which did not happen to be malignant in any of his cases in this group. He has operated for cancer of the gall-bladder in a number of cases among the hundred he has encountered, but never with a permanent cure; the patients had all died by the end of the ninth month after the operation although in some of the cases the operation was done at the first attack of "cholecystitis." Even when the region is exposed it is difficult to state whether the trouble is really malignant, and he is inclined to suspect that in the cases of permanent cures on record the trouble was in reality not of a malignant nature or else an individual with an incipient cancer may have had an intercurrent attack of true cholecystitis, thus permitting the discovery of the growth in its incipiency. The only way to be sure to escape gall-bladder cancer, he says, is to have the bladder removed with its stones, but unfortunately the majority of cancers develop with stones in the latent stage. But for those persons who are aware of the presence of their stones he proposes the harmless operation done to ensure them against danger. The patients generally reply, however, that the chances are so small they will take them rather than undergo the operation. And yet this prophylaxis seems to be the only weapon against cancer of the gall-bladder. The patients kill two birds with one stone by permitting the operation; they not only ward off all danger of cancer from this source but they get rid of the annoying gall-stone trouble. With a positive diagnosis of cancer of the gall-bladder he does not attempt now to operate, believing that the disease is whipped up possibly by the extensive operation necessary while the lack of benefit deters other patients with non-malignant troubles from the surgical interference which would bring such blessings in their cases.

91. **Pyelography.**—Lichtenberg and Dietlen have found that filling the kidney pelvis with oxygen is of great advantage in Roentgen-ray examination of the region, as they show by skiagrams in three cases. The simplicity and ease of this method and the absence of by-effects commend it, they say, as a notable progress in roentography. Any excess of the oxygen flows back outside the catheter in the ureter down into the bladder, distending the wall along the way.

99. **The Diazo Reaction in Pulmonary Tuberculosis.**—Weisz calls the substance which causes the diazo reaction in the urine, "urochromogen," and his extensive research on the reaction has convinced him that it is a most sensitive and reliable index of the progress of pulmonary tuberculosis. Determination of the urochrom and urochromogen in the urine at regular intervals gives instructive oversight of conditions. From this point of view, he adds, no measure has proved so completely successful as the induced pneumothorax in treatment of pulmonary tuberculosis; this alone seems to be able to transform the diazo reaction back to normal. Determination of the elim-

ination of urochromogen in the urine is also proving a useful guide for dosage of tuberculin during this specific treatment. The findings with the diazo reaction confirm the necessity for greater caution in the dosage of tuberculin for children and for women. Weisz thinks that women should not be given over a tenth of the dose customary for men and children not over a hundredth. It is then a simple matter to increase the dose if the diazo findings indicate tolerance. He explains the diazo reaction as the expression of some toxic disturbance of the cell metabolism throughout the organism, but it does not occur until the toxins produced get into the circulation, and consequently it does not appear so early in tuberculosis as in measles and typhoid, tuberculosis being more of a local affection at first. When the tubercle bacilli secrete enough toxins to induce a general toxemia, then the diazo reaction becomes positive and it fluctuates with the vital activity of the bacilli, dying out as the latter become quiescent or die. He ascribes the production of cavities to the destructive action on the environing tissues of the bacilli toxins when the oxidating power of the cells in question has been impaired; urochromogen appears in the urine in consequence. He has never witnessed a cure under tuberculin when the diazo reaction was previously positive and he inquires what has been the experience of others in this line. Patients with processes advanced to the stage of the diazo reaction do not seem to bear tuberculin well.

100. **Water-Closet Plunger Worked by the Foot.**—Hartung expatiates on the insanitary features of having the water closet operated by a handle or chain to be taken in the hand. He suggests that a knob or pedal worked by pressure of the foot would be far more sanitary and prevent much contagion.

Therapie der Gegenwart, Berlin

June, LII, No. 6, pp. 241-288

101 *Therapeutic Lumbar Puncture. H. Curschmann.
102 *Liver Syphilis. (Fall von tertiärer Leberlues.) H. Günther.
103 *Permanent Cure of Sarcoma of Stomach. (Dauerheilung eines Magensarkoms durch Resektion vor 7½ Jahren.) O. Hesse.
104 Sex, Age and Constitution Afford no Predisposition to Plague. (Gibt es eine Prädisposition von Geschlecht, Alter und Konstitution bei Infektion durch die Lungenpest?) B. Budberg.
105 *Treatment of Measles and Bronchopneumonia. A. Baginsky.
106 *Local Treatment of Chronic Cough. (Radikale Therapie des chronischen Hustens.) W. Wolfram.

101. **Therapeutic Importance of Rachicentesis.**—Curschmann has witnessed complete recovery follow a single lumbar puncture in a number of cases of serous meningitis and of the meningeal trouble which seems to be the equivalent in the meninges of circumscribed edema elsewhere. One patient was a girl of 20 brought to the hospital in profound coma, all the reflexes abolished, the Babinski sign positive, and all the signs of severe pressure on the brain for several days. The patient collapsed after the lumbar puncture, and injections of camphor were necessary at first, but she then rapidly recovered and has been in good health for over three years since. In another case a man of 58 has had six recurring attacks of serous meningitis in the course of the last year; rachicentesis gave great relief, releasing a clear and sterile fluid under high pressure each time. Lumbar puncture with suppurative and infectious serofibrinous meningitis is less promising but even then the results are better than with any other measure known to date. In two cases of severe influenzal meningitis with bacilli in the fluid and polynucleosis, the intense headache and pains in the back of the neck subsided entirely after the lumbar puncture and the patients rapidly recovered. These cases when compared with the tedious convalescence and paralysis and atrophy observed in influenzal patients not treated by lumbar puncture testify eloquently, he remarks, to the value of this procedure. He has also witnessed similar good effects in a case of streptococcus meningitis following erysipelas of the head. Meningitis originating in the ear does not respond so well to lumbar puncture, but it is one of the most valued measures in treating epidemic meningitis. Curschmann does not approve of injecting a disinfectant into the spinal canal, although a very weak saline or boric acid solution might occasionally have a favorable effect. Sir Victor Horsley's intradural injection of mercuric bichlorid solution in progressive paralysis and cerebrospinal syphilis is looked on askance by German neurologists. Lumbar puncture is useful in differentiation of tuberculous meningitis but is of little avail in treatment, although the disease in some cases has a tendency to spontaneous remissions. He reviews the various other affections in which rachicentesis has proved useful, and in conclusion urges the general practitioner to familiarize himself with the technic until it becomes as much of a routine procedure as puncture of the pleural or abdominal cavity.

102. **Syphilis of the Liver.**—In the case reported the patient was a woman of 31, apparently healthy, until she began in 1906 to have pains in the gall-bladder region, gradually growing more severe and sometimes accompanied with vomiting. By 1908 the attacks of pain recurred every day and there was persisting jaundice. The gall-bladder was opened and some gall-stones removed, but persistence of the pains led to cholecystectomy in January, 1910. The continuance of trouble suggested cancer of the liver with metastasis, but a tentative course of potassium iodid was commenced in February and the assumption of syphilis was confirmed by development of a gumma on the leg. An injection of salvarsan was given in September but the progress of the tertiary syphilis did not seem to be arrested and the patient succumbed a month later. Necropsy revealed gummatous cirrhosis of the liver. The amenorrhea might have earlier suggested a syphilitic affection, as also the shifting symptomatic picture, the partial improvement under potassium iodid, the fever as indicating absorption of the products of the gummatous tissues—the breaking down of the gummata inducing recurring attacks of chills, high fever, increase in the jaundice and acholia, the terminal attack being accompanied by progressive peritonitis and heart weakness. The patient had been under hospital care at intervals since 1908, but syphilis does not seem to have been suspected until early in 1910, and death followed before the end of the year.

103. **Successful Resection of Sarcoma of the Stomach.**—Hesse's patient was a woman of 41 who had had no appetite for years and showed signs of chlorosis and neurasthenia when she applied for relief from spasmodic pains in the region of the cardia, coming on from half an hour to an hour after eating and also fasting. Nothing was found to explain the pains and they subsided after gastric lavage for a time but returned during a pregnancy not long after and became more intense after delivery, radiating to the back and accompanied by vomiting after nearly every meal. A new examination a year after the first, revealed a compact, knobby tumor near the umbilicus, evidently not obstructing the pylorus, and it proved to be a fibrosarcoma in the anterior wall of the stomach, as large as a fist. After resection of two-thirds of the stomach all trouble was at an end, and the patient is in good condition to date, seven and a half years later, working eleven hours a day in a laundry.

105. **Measles and Bronchopneumonia.**—Baginsky remarks in the course of his general lecture that 7,612 persons had died from measles at Berlin in the twenty years before 1906, a mortality of about 5 per cent., and certain epidemics have a far higher mortality. He urges constant oversight of the ears with the speculum as the only means to detect ear complications in their incipiency; local disinfection seldom does much good in measles otitis until after perforation when suitable measures usually lead to a rapid cure. In case high fever or symptoms of meningitis accompany the otitis, the membrane should be incised without delay. When diphtheria accompanies measles each disease should be managed as if isolated. The special danger of this association is that the diphtheria is generally not recognized until far advanced. When diphtheria bacilli are found in the secretions, antitoxin should be given at once without waiting for symptoms. In conclusion he warns that children who have recently passed through measles are exceptionally susceptible to tuberculosis and hence should be guarded with special care against this infection.

106. **Local Treatment of Chronic Cough.**—Wolfram treats both acute and chronic tracheal and bronchial catarrh, and the cough with it, by direct injection into the trachea of

a warm disinfecting and astringent solution. He inserts Frankel's laryngeal syringe with the aid of the laryngoscope and has been amazed at the tolerance of the trachea and bronchi. Insufflation of a powder is liable to induce spasmodic contraction of the larynx; but he has never observed this with the intratracheal injections. He injects two or three syringefuls, using weak boric acid, tannic acid, silver nitrate or other disinfectant solutions, and has found this by far the most effectual treatment for low-seated cough.

Wiener klinische Wochenschrift, Vienna

June 22, XXIV, No. 25, pp. 891-926

107 *Indirect Palpation of Liver and Stomach. (Das Beklopfen der Leber und des Magens und der Vibrationsdruck.) W. Jaworski.
108 The Secretion of the Prostate. (Ueber Prostatasekretion.) R. Fischel and K. Kreibich.
109 Advantages of Expectant Treatment of Retained Scraps of Fetal Membranes. (Zur Behandlung retinierter Eihautreste.) M. Steinsberg.
110 Recommendation of Moving Pictures to Teach Management of Electric Accidents. (Kinematographie im Dienste der Elektropathologie.) S. Jellinek.
111 Mechanism of Pulmonary Emphysema. (Zur Mechanik der Lungenblähung.) M. Sihle.

107. **Indirect Palpation of Liver and Stomach.**—Jaworski has found that striking the skin with the ulnar side of the hand in the interspaces parallel to the ribs is liable to cause pain in a deep-seated organ below if it is inflamed, even when there is nothing otherwise to suggest tenderness in the organ. Finger-finger percussion is also liable to elicit this internal pain. In a number of dubious cases the results of this indirect palpation first cleared up the diagnosis of cholelithiasis by confirming or excluding the presence of inflammation. Differentiation by this means has done valuable service in a number of cases suggesting both cholelithiasis and round ulcer, one or the other being excluded by the localization of the pain deep below the surface when this tapping or percussion was applied. The pains with downward displacement of the viscera also frequently simulate gall-stone colic or vice versa, and here the tapping pain is of decisive importance. Positive findings indicate active local irritation and consequently they may be transient, and gall-stones may be present without active inflammation. Tapping in this way is unable to differentiate trouble in the right kidney from gall-stone disturbances, but the diagnosis is generally cleared up when the percussion is applied from the rear. When there is doubt whether the pain is purely nervous, he applies vibration to the percussing hand, inducing a kind of vibration massage, which is liable to have a beneficial effect in purely nervous troubles, while in a case of actual ulcer or gall-stone mischief, the pain is aggravated by the vibrations. Jaworski relates the details of a number of typical cases to illustrate the various points he emphasizes.

Zeitschrift für Kinderheilkunde, Berlin

II, Nos. 2-4, pp. 123-346. Last indexed July 1, p. 56

112 *Attenuation of Scarlet Fever by Prophylactic Serotherapy. (Abschwächung des Scharlachs durch prophylaktische Seruminjektionen.) E. Benjamin and O. Witzinger.
113 Hydrocephalus in Infants After Hemorrhage in Dura. W. Fischer.
114 Roentgen-Ray Stomach Findings in Infants and Young Children. (Ergebnisse von Magenuntersuchungen mittels Röntgenstrahlen im Säuglings- und späteren Kindesalter.) H. Flesch and I. Peteri.
115 Anthracosis of the Lungs Result of Inhalation. L. Findlay.
116 Comparative Development of Nurslings in Same Family. (Ueber schlechte Entwicklung von Geschwistern während der Stillung.) G. Tugendreich.
117 Obese Children and the Exudative Diathesis. (Adipositas und exudative Diathese.) H. Pisel.

No. 5, pp. 347-436

118 Physical Properties of Infants' Blood. II. (Der osmotische Druck des Blutes des Säuglings.) B. Salge.
119 Clinical and Metabolic Research on Action of Sodium, Potassium and Calcium Salts on Infants. (Wirkung verschiedener Salze beim Säuglinge.) L. F. Meyer and S. Cohn.
120 Chemistry of Infant's Stomach. (Zum Chemismus des Säuglingsmagens.) H. Davidsohn.
121 Central Origin of Salt Fever in Infants and Older Children. (Zum Kochsalzfieber.) S. Cobliner.

112. **Favorable Effect on Scarlet Fever of Prophylactic Serotherapy.**—The long article by Benjamin and Witzinger relates their experiences with scarlet fever developing in children who had been given one or more injections of diphtheria antitoxin on entering a contagious disease ward—a total of 138 cases of scarlet fever following diphtheria, measles or varicella, in the course of fifteen years in two cities. That the serotherapy had an attenuating influence on the scarlet fever they think is beyond question. Among the other data cited to sustain this view is that the fever lasted only one day in 76.2 per cent. of the cases, two days in 4.8 per cent. and over three days in 19 per cent. in the serum-treated cases after uncomplicated diphtheria, while in the control, untreated cases of primary scarlet fever, these figures were respectively 8.5, 16.4 and 75 per cent. Still more conclusive testimony is afforded by the exceptionally mild course of the scarlet fever in a child given a prophylactic injection of antitoxin at home after a brother or sister had developed scarlet fever. Only one child in each of the seventy families was given the antitoxin, and in this child the disease developed in such a mild form that the diagnosis was only retrospectively positive when desquamation set in, while the other children developed a serious form of the disease. This phase of the research was hampered by the fact that in the prevailing epidemics there was contagion of other members of the family only in about 10 per cent. of the cases—an unusually small proportion. A number of questions bearing on the influence of antitoxin on scarlet fever are discussed and the facts emphasized that whereas in former years the mortality was extremely high in scarlet fever following diphtheria, under serotherapy the superposed scarlet fever did not prove a dangerous complication in the experiences related. In conclusion Benjamin and Witzinger suggest the advisability of a prophylactic injection of antitoxin as early as possible when the first case in the family is unusually severe and isolation is impracticable for any reason. Unfortunately, they add, the duration of the efficiency of the serum is limited and individually variable. It may be possible to prolong this period of efficiency by injection of serums of different origins. Their research did not include the question whether complications were rarer and milder than under other conditions. They append summaries of all their cases of *scarlatina mitigata*, the work filling 128 pages.

Zentralblatt für Chirurgie, Leipsic

June 22, XXXVIII, No. 25, pp. 857-888

122 *Cosmetic Technic for Treatment of Complicated Harelip. (Rückverlagerung des prominenten Zwischenkiefers bei komplizierten Hasenscharten ohne Einziehung der Nasenspitze.) A. Reich.

122. **Operation for Harelip.**—Reich gives an illustrated description of a method for correcting harelip without disfiguring the profile of the nose when the upper jaw protrudes. The main point in the technic is an osteotomy of the nasal septum, utilizing the part containing the groove at the median line of the upper lip to form a new septum, before proceeding to the usual osteotomy on the vomer.

Zentralblatt für Gynäkologie, Leipsic

June 24, XXXV, No. 25, pp. 889-920

123 *Tincture of Iodin Sterilization in Obstetrics. H. H. Schmid.
124 *Pregnancy with Double Uterus. R. Klages.

123. **Tincture of Iodin in Obstetrical Sterilization.**—Schmid states that the tincture of iodin method is used currently at the Prague maternity as a preliminary to all obstetric maneuvers, and that it has fulfilled all expectations. After the vulva and vicinity have been wiped dry the tincture of iodin is applied from the pubis to beyond the anus and past the tuberosities of the ischium on each side. If the women were not under the influence of an anesthetic they complained of smarting wherever the tincture touched the mucosa, but this smarting lasted less than a minute.

124. **Pregnancy in a Double Uterus.**—Klages opened the abdomen of a woman on suspicion of extra-uterine pregnancy causing trouble, and found that the four-months' fetus was in the right half of a double uterus with a single cervix. The woman had passed through four apparently normal pregnancies and deliveries previously. The existing pregnancy did not seem to be molested by the laparotomy, and is progressing to term, the operation having been followed by retrogression of the symptoms for which it had been done.

Gazzetta degli Ospedali e delle Cliniche, Milan

June 15, XXXII, No. 72, pp. 763-770

125 *Pure Mitral Stenosis and Tuberculosis. V. Fusco.

June 18, No. 73, pp. 771-786

126 *Improved Technic for Determination of Spirochete of Syphilis. (Un semplice artifizio di tecnica applicabile all' ultramicroscopio per ricerche biologiche e terapeutiche sulla spirocheta pallida.) F. de Napoli.

125. **Pure Mitral Stenosis and Tuberculosis.**—Fusco regards pure mitral stenosis as the result of defective development, and thinks that tuberculosis should be incriminated. In a case described in detail the mitral stenosis developed at puberty in a girl with an inherited tuberculous taint and the phthisical habitus, although apparently healthy.

126. **Improved Technic for Examining Spirochetes.**—Napoli has found that work with the ultramicroscope is much facilitated by placing a few drops of salt solution or distilled water on the sides of the slide holding the specimen under examination. This starts osmotic currents which show up the specimens much better. By adding a chemical to the water it is possible to study its microbicidal action on the spirochetes in the microscopic field. He has thus obtained interesting results with salvarsan and other substances that act on these germs.

Riforma Medica, Naples

June 19, XXVII, No. 25, pp. 673-700

127 Multiple Tuberculous Joint and Tendon Lesions. (Sinovite articolare e tendinea tubercolare multipla.) A. d'Antona.

128 *Vertebral and Paravertebral Hepatic Dulness on the Left Side. (Su di un'ala di ottusità vertebrale e paravertebrale sinistra alla base del torace.) L. Ferrannini.

128. **Vertebral and Paravertebral Hepatic Dulness on the Left Side.**—Grocco here gives further details in regard to this sign, with nine illustrations showing the exact localization and the interpretation of the area of dulness. (His previous communication was summarized in THE JOURNAL, March 4, page 707.)

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

SCIENTIFIC MEMOIRS BY OFFICERS OF THE MEDICAL AND SANITARY DEPARTMENT OF THE GOVERNMENT OF INDIA. THE PREPARATION OF A SAFE AND EFFICIENT ANTIRABIC VACCINE. By Lieut.-Colonel Sir D. Semple, Kt., M.D., D.P.H., R.A.M.C. (Retired), Director, Central Research Institute, Kasauli. New Series, No. 43. Paper. Price, 9 pence. Pp. 32.

THE RELATION OF TETANUS TO THE HYPODERMIC OR INTRAMUSCULAR INJECTION OF QUININ. By Lieut.-Colonel Sir D. Semple, Kt., M.D., Director, Central Research Institute, Kasauli. Scientific Memoirs by Officers of the Medical and Sanitary Department of the Government of India. New Series, No. 44. Paper. Price, 1 shilling 2 pence. Pp. 61.

LEHRBUCH DER AUGENHEILKUNDE IN DER FORM KLINISCHER BESPRECHUNGEN. Von Dr. Paul Römer, o.ö. Professor der Augenheilkunde, Direktor der Universitäts-Augenklinik zu Greifswald. Paper. Price, 22 marks. Pp. 1,028, with 209 illustrations. Berlin: Urban & Schwarzenberg (New York: Rebman Company), 1911.

KURSUS DER NORMALEN HISTOLOGIE. Ein Leitfaden für den praktischen Unterricht in der Histologie und mikroskopischen Anatomie. Von Rudolf Krause, a.o. Professor der Anatomie an der Universität Berlin. Paper. Price, 22.50 marks. Pp. 441. Berlin: Urban & Schwarzenberg (New York: Rebman Company), 1911.

HAUTKRANKHEITEN SEXUELLEN URSPRUNGS BEI FRAUEN. Von Dr. Oskar Scheuer, Fachartz für Haut- und Geschlechtskrankheiten in Wien. Paper. Price, 9.50 marks. Pp. 204. Berlin: Urban & Schwarzenberg (New York: Rebman Company), 1911.

THE HUMAN ATMOSPHERE, OR THE AURA MADE VISIBLE BY THE AID OF CHEMICAL SCREENS. By Walter J. Kilner, B.A., M.B. Cantab. Cloth. Price, with screens, $9. Pp. 329, with 28 illustrations. New York: Rebman Company, 1911.

THE MEDICAL REGISTER. Printed and Published Under the Direction of the General Council of Medical Education and Registration of the United Kingdom. Cloth. Pp. 1,784. London: Spottiswoode & Co., Ltd., 1911.

TWENTY-FOURTH ANNUAL REPORT OF THE BOARD OF MANAGERS OF THE ST. LAWRENCE STATE HOSPITAL, OGDENSBURG, N. Y., to the State Commission in Lunacy for the Year Ending Sept. 30, 1910. Paper. Pp. 38.

THOUGHTS OF A CATHOLIC ANATOMIST. By Thomas Dwight, M.D., LL.D., Parkman Professor of Anatomy at Harvard. Cloth. Price, $1 net. Pp. 243. New York: Longmans, Green & Co., 1911.

ACTAS Y TRABAJOS DEL SEGUNDO CONGRESO MÉDICO NACIONAL, HABANA, Febrero 24-28, 1911. Leather. Pp. 504. Dr. Mario G. Lebredo.

TWENTY-FIRST BIENNIAL REPORT OF THE MANAGING OFFICER OF THE ELGIN STATE HOSPITAL AT ELGIN, ILL. July 1, 1910. Paper. Pp. 72.

SIXTH ANNUAL REPORT OF THE AMERICAN NATIONAL RED CROSS, Covering the Period from Jan. 1 to Dec. 1, 1910. Paper. Pp. 168.

STUDIES IN TYPHOID FEVER. By the Washington State Board of Health During 1909-1910. Pp. 110.

New Patents

Recent Patents of Interest to Physicians

976550. Surgical binder. Rebecca V. Coddington, Gallup, N. Mex.
976286. Fumigator. Joseph C. Kemball, Arden, Wash.
976812. Mouth speculum. John F. Koehler, West Hammond, Ill.
976665. Apparatus for impregnating liquids with coagulants. John W. Ledoux, Swarthmore, Pa.
976200. Vibratory apparatus for ear treatment. Eugene Meyer, New York.
976699. Mechanism for grinding or mixing emulsions. Wilhelm G. Schroder, Lubeck, Germany.
976307. Hydraulic invalid lifter. Thomas M. Smith, Baltimore.
976423. Massage machine. Edward E. Ziegler, Philadelphia.
977154. Window tent. John G. Allen, Peoria, Ill.
976993. Massage vibrator. Axel E. Ellis, Quincy, Mass.
976862. Medical eye cup. Jason S. Fox, Honolulu, H. T.
977383. Cord for surgical ligatures and other purposes. Paul H. J.-P. M. C. de Gery, Nantes, France.
977312. Fumigator. Otto Immermann, Halle-on-the-Saale, Germany.
977098. Truss. John W. Kayser, Madison, Wis.
976883. Combined abdominal supporter and catamenial sack. Rudolph H. Keagy and M. L., Canton, Ohio.
977029. Pasteurizer. William J. McKee, Detroit, Mich.
977243. Invalid lifting apparatus. Garrett White, Chapel Hill, Tenn.
977353. Disinfector and deodorizer. Joseph W. H. and E. R. Williams, Sharpsburg, Pa.
977583. Physician's tablet holder. Harber C. Beardsley, Lakewood, Ohio.
977952. Surgical syringe. Adolf Heilmann and B. Tauss, Leipsic, Germany.
978031. Massage machine. Arthur A. Kent, Philadelphia.
977635. Medicated article. Arthur B. Klein, Covington, Ky.
977825. Surgical instrument. George N. Murphy, Paducah, Ky.
977968. Siphon. Louis Riebe, Summithill, Pa.
977842. Magnetic specimen holder for microscopes. Albert Sauveur, Cambridge, Mass.
977974. Artificial limb. William E. Showalter, Harrisonburg, Va.
977489. Speculum. Victor von Unruh, New York.
978534. Hand rubber. Morris Angert, New York.
978708. Surgical device for expanding collapsed lungs. John S. Dean, Wheatland, Iowa.
978142. Disinfecting compound. Wilhelm Dreyfus, New York.
978728. Apparatus for the administration of general anesthetics. Carroll H. Frink, Jacksonville, Fla.
978709. Surgical table. Solon M. Langworthy, Cedar Rapids, Iowa.
978313. Pump for medicating air. James A. Lee, Bellaville, Ohio.
978331. Litter carrier. Gustav A. Olson, Albert Lea, Minn.
978332. Litter carrier. Gustav A. Olson, Albert Lea, Minn.
978200. Disinfecting lamp or candle. Walter L. Plumb, Glen Ridge, N. J.
978488. Hypodermic syringe and cartridge therefor. Alfred Roesch, New York.
978540. Litter carrier. Fred and A. Strand, Dennison, Minn.
978794. Bandage. Greenleaf S. Van Gorder, Pike, N. Y.
979247. Oxidizing borneol to camphor. Geza Austerwell, Neuilly, near Paris, France.
978985. Syringe. Jesse R. Burdick and R. T. Fulton, Boulder, Colo.
979260. Invalid and like bed. Horace S. Collier, London, England.
978988. Medicine dose dropper. Malcolm Cunninghan, Savannah, Ga.
979386. Disinfector. Theodor Druzbach, Hoboken, N. J.
979147. Articulated mounting for bones of a body. Harrison H. Fryette, Chicago.
979005. Sanitary receptacle. Frank L. Hoffman, Denison, Iowa.
979329. Appliance for removing corns. Otto F. Muller, New York.
978940. Metallic bed pan. David Saks, New York.
979395. Pile remedy. Michael Straub, San Francisco.
979362. Apparatus for making extracts. Wilhelm Wiegand, Nerseburg, Germany.
981628. Medical radiator for use in beds. Carlo Ferrari and C. Gallo, Turin, Italy.
982211 Sputum cup. Charles L. Knudsen, New York.
981256. X-ray apparatus. William S. Fullerton, St. Paul, Minn.
981090. Artificial foot. Harry W. Karn, Pittsburg, Pa.
981102. Electrolytic device for generating pure oxygen and hydrogen. Rene Moritz, Wasquehal, France.
981103. Apparatus for making sulfuric acid. Rene Moritz, Wasquehal, France.
980996. Device for generating and administering oxygen. David E. Parker, Niagara Falls, N. Y.
980756. Device for charging capsules. Domingo Brescia, Quito, Ecuador.
980896. Ophthalmometer and certain other sight-testing instruments. Egbert and C. S. Gowland, Croydon, England.
980292. Food for diabetics. Eduard Lampe, Frankfort-on-the-Main, Germany.
980319. Take-up for flexible suspensories. John W. Milam, Frankfort, Ky.
980457. Artificial limb. Justin K. Toles, Stockton, Cal.
979416. Menthylated oil of wintergreen. Gustav Blieberger, New York.
979565. Surgical instrument. Henry Johnson, Woodford, Wis.
979959. Combined crutch and chair. Samuel J. Johnson, Fort Worth, Texas.

V. 5
1911